

FURTHER NOTES ON AUSTRALIAN COLEOPTERA, WITH
DESCRIPTIONS OF NEW GENERA AND SPECIES.

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XXXVI.

LAMELLICORNES.

COPRIDES.

ONTHOPHAGUS.

O. Macleayi, Blackb. I have received from Mr. R. C. L. Perkins a number of specimens from North Queensland, which I cannot venture definitely to pronounce specifically distinct from *O. Macleayi*, although they present some differences. They are of darker colour (dark piceous), with the apex and the hinder part of the lateral margins of the elytra red. This colouring points to the probability that the unique type of *O. Macleayi* is immature, its colour being dark red brown, with a traceable indication of still lighter colouring of the sides and apex of the elytra. The eyes are a little less distinctly granulate in the type (which again may result from immaturity), so that these recently acquired specimens do not fall so evidently as the type into the aggregate characterized in my tabulation (Tr.R.S.S.A., 1903, p. 270) as having the eyes "scarcely visibly faceted on their surface," although they certainly could not be referred to the other aggregate (of species having the eyes "conspicuously faceted"). On the whole, I believe them to be *O. Macleayi*. Among the Queensland specimens there is one male, all the rest (and also, contrary to my previous opinion, the type, assuming identity) being females. The male prothorax is much more massive than the female, with its front strongly and vertically declivous, the slight protuberances of the female notably exaggerated, and the puncturation of the dorsal surface finer and less close. The male clypeus is more elongated and narrowed in front, with its front almost evenly rounded. The sexual difference of the front tibiæ is almost nil. The Queensland specimens vary considerably in size (long. 3-4 l.), and in some of them the pronotum has a slight coppery gloss. The head of the male is unarmed.

O. bipustulatus, Fab. By some oversight I misplaced this species in tabulating the *Onthophagi* of Australia (Tr.R.S.S.A., 1903). I placed it among the species having the base of the pronotum without any raised or depressed mar-

gin, whereas it should stand among those having a fine raised margin along the base (Group V.), where its place will be beside, *Zietzi*, Blackb., and *nitidior*, Blackb. (page 271), from both of which it differs by the presence of a humeral red spot on each elytron. The punctures of its elytral interstices are notably stronger than those of *O. Zietzi*, and much less coarse than those of *O. nitidior*.

SERICIDES.

DIPHUCEPHALA.

This extensive genus, no doubt on account of its species being for the most part of brilliant colourings, and many of them very abundant, contains numerous species whose so-called descriptions are scarcely worthy of being called descriptions at all. Consequently a really reliable monograph of its species is practically unattainable. On this ground, I have always hitherto omitted it when dealing with allied genera. As, however, the types are so scattered over the world that it is not likely one author can be in a much better position than another for solving the many enigmas of the genus, the only prospect of eventually reducing it to order seems to lie in someone making the best attempt he can at a revision of its contents, and so giving an opportunity for those who have access to individual types in isolated collections to confirm or correct with authority his identifications. It is with this idea that I offer the following notes on the genus, and I hope to be able at least to render it possible to identify the insects to which the specific names are applied in a memoir that, if in places needing correction, at any rate discusses all the existing names in a connected series. I have had the advantage of examining nearly all the types of Sir W. Macleay's species, and some of his identifications of species described in Europe, and therefore probably have at command as much profitable material for the work as anyone else could have.

The species of *Diphucephala* have been described under 56 names, the earliest description being, I think, that of *D. colaspoides*, Schönh., published about the year 1806. The only treatises that I know dealing with the species collectively are those of Mr. G. R. Waterhouse (A.D. 1835), dealing with 16 species, and Sir W. Macleay (A.D. 1886) dealing with 43 species. The former of those treatises is, of course, obsolete, and the latter merely gives descriptions (many of them very insufficient) of the species known to the author, and which are divided into five groups, but not further classified. Burmeister, it is true, in 1855, included a synopsis of the genus in his "Handbuch der Entomologie," but it contained only a slight grouping of the species, and was little more than

a repetition of Waterhouse, with the addition of three new species. Other authors only catalogued the species or described new ones. No *table* has been published to indicate the distinctive characters.

Of the 56 names referred to above, 11 are placed in Masters's Catalogue, which is, I believe, the latest catalogue of the Australian *Diphucephalæ*, as mere synonyms. The following of them I propose to assume to be correctly treated in that catalogue, although in most instances their determination (largely traditional) is very unlikely to be founded on examination of types, and, if that is the case, is little more than guesswork, owing to the insufficient nature of the descriptions. But since they have been assigned to certain species as synonyms, no end would be served by changing the assignment through a different guess. I propose, therefore, to let the following synonymy stand pending substantial reasons for changing it:—

D. foveolata, Boisd. = *aurulenta*, Kirby.

D. lineatocollis, Boisd. = *colaspidoides*, Macl. (? Gyll.).

D. splendens, W. S. Macl. = *colaspidoides*, Macl. (? Gyll.).

D. acanthopus, Boisd. = *furcata*, Guér.

D. pilistriata, Waterh. = *lineata*, Boisd.

D. anea, Sturm = *rugosa*, Boisd.

D. viridis, Sturm = *sericea*, Kirby.

D. pusilla, Waterh. = *smaragdula*, Boisd.

The following synonymy of Masters' Catalogue must not be allowed to stand:—

D. pygmaea, Waterh. = *fulgida*, Boisd.

[Waterhouse's description applies to a very distinct and easily recognizable species. Boisduval's is quite worthless, founded on a specimen which had lost its legs, and is incapable of confident identification with any insect.]

D. Hopei, Waterh. = *furcata*, Guér.

[Waterhouse's description applies well to a very distinct species. Guérin's description (Voy. Coquille, vol. ii, 1830, p. 89), though very lengthy, cannot be definitely associated with the insect which Waterhouse described, because it omits reference to an important sexual character which Waterhouse correctly indicated in his species; it, however, applies very well to an insect closely allied to *Hopei*, and the only objection to regarding it as referring to that insect is its citing Port Jackson (instead of Western Australia) as the *habitat*. I take it that Guérin's *habitat* is erroneous, and I regard *Hopei* and *furcata* as two good species. It is to be noted that Waterhouse (Tr. Ent. Soc., I., 1836, p. 219) mentions a *D. furcata*, Guér., for which he gives the reference, "Griff. Cuv. Insecta,

I. p. 483," of which he gives a short diagnosis, adding his opinion that it is not a *Diphucephala*. I have not the work he refers to, but have no doubt Waterhouse's opinion is correct. The insect of which he furnishes the diagnosis is clearly, however, not that which Guérin described in Voy. Coquille.]

D. Spencei, Waterh. = *rugosa*, Boisd.

[Here again Waterhouse's description can be confidently identified with a familiar species; but Boisduval's *rugosa* might be any one of several *Diphucephalæ*. I think that I know *rugosa*, Boisd., from its being a common species near Sydney, and one of those that fit the description, and therefore I propose to retain the name and treat *Spencei* and *rugosa* as two good species. And here I may remark that Waterhouse himself seems to have confused the two species, since he states in a footnote to the description of *Spencei* that after writing it he had observed the female of that insect to differ from the male by the front angles of the prothorax not being produced. The female in question was no doubt a specimen of the insect that I take to be *rugosa*, Boisd. I have both sexes of both species before me, and do not find that there is any sexual difference in the front angles of the prothorax. This confusion of *Spencei* and *rugosa* no doubt is what accounts for Waterhouse's memoir not containing the description of so common a species as that which I have called *rugosa*, Boisd.]

Of species more recently described I find that *D. latcollis*, Lea (which I have received from its author), is evidently the species that Waterhouse described as *Spencei*; and an examination of the presumable type of *D. prasina*, Macleay (in the Macleay Museum), has satisfied me that it is the insect which I described as *D. Kershawi*, Macleay's being the older name.

I have now indicated as synonyms 10 of 56 names that have been used for *Diphucephalæ*. Of the remaining 46 I have been able to identify, with more or less confidence, and tabulate the characters of, 35 of the species that they represent, and I furnish below descriptions of 6 new species, bringing the total to 41 species. There are thus left 11 names to be accounted for, on which I make the following notes. To prepare these notes I have visited the Sydney Museums, and have there examined the specimens bearing the names that Macleay used for *Diphucephalæ*, but, unfortunately, with not very satisfactory results, as there is in very few instances any mark to indicate the actual type. In some cases specimens of more than one species bear the same name, and in one instance the presumable type differs widely in colouring from

the description. I place the names now to be treated of in alphabetical order:—

D. azureipennis, Macl. The presumable type (in the Macleay Museum) does not seem to me to differ from *D. pulchella*, Waterh. It is a female.

D. cœrulea, Macl. Type presumably in the Brisbane Museum, which I have not visited. The description would fit several species.

D. cuprea, Macl. The presumable type (in the Macleay Museum) appears to me *D. rugosa*, Boisd., var.

D. fulgida, Boisd. The description cannot be identified with any particular species.

D. hirtipennis, Macl. Type presumably in the Brisbane Museum. The description does not enable me to place the species in my tabulation; but I think it is a good species which I have not seen.

D. humeralis, Macl. The presumable type (in the Macleay Museum) appears to me to be *D. rugosa*, Boisd., var.

D. latipennis, Macl. Type presumably in the Brisbane Museum. The description contains no definite information as to whether the longitudinal sulcus of the pronotum is divided in its basal part. If it be not divided, *latipennis* is probably near *Mastersi*, Macl.: if it is divided, the species will stand in my tabulation near *parvula*, Waterh.

D. lateralis, Macl. I can find no difference, except a little in colour, between the presumable type (in the Macleay Museum) and the species which stands in the same Museum (correctly, I have no doubt) as *D. pygmaea*, Waterh.

D. obscura, Macl. The presumable type in the Macleay Museum does not appear to differ, except in colour, from that of *D. nitidicollis*, Macl. The only definite distinction that the description indicates consists in the greater length of the lateral foveæ of the pronotum in *obscura*; but I do not find this a reliable character, except in a few instances of very peculiar lateral foveæ. The length of these foveæ varies somewhat within the limits of a species, and also appears different from different points of view.

D. pubiventris, Burm. The description of this species is very defective, and is founded on a female example. I am fairly confident, however, that the insect it represents is *D. rugosa*, Boisd. Macleay makes the name a synonym of *colaspoides*, Macl. (? Gyll.), but, *inter alia multa*, the size that Burmeister assigns is much too small for that identification. According to Burmeister, *D. rugosa*, Boisd., is a synonym of *D. aurulenta*, Kirby; but the latter is one of the species that even the vague description of *D. rugosa* cannot be made to fit.

D. Waterhousei, Burm. Macleay says that he has never seen this species. Neither have I seen any species that fits the description. Burmeister says that the form of its front tibiæ is very remarkable, but the description of the tibiæ that follows does not specify any character that is not found in other species.

I now add notes on a few species which seem to call for special remark.

D. pulchella, Waterh. The female of this species is stated by Blanchard to have mucronate elytra. This is incorrect. Probably Blanchard had before him the female of the species which Macleay subsequently named *Barnardi*.

D. pusilla, Waterh. I have not been able to identify this species. Its author says that it is unique in the Macleay Museum, but I have failed to find it there. The description does not mention any very salient character by which the insect would be easily recognized. Waterhouse says that its allies are *D. parvula* and *D. Spencei*—two species that certainly are not closely allied, *inter se*, among the many *Diphucephalæ* now known.

D. smaragdula, Burm. It is possible (but only possible) that Macleay may be right in making *pusilla*, Waterh., a synonym of this species. It is most improbable that he had seen the type of *D. smaragdula*, and the description of that species would fit almost any *Diphucephala*. I have used Boisduval's name for a species which will, I think, be recognizable by the characters indicated in my tabulation, because that species, being one of the many that Boisduval's quasi-description fits, was taken at no great distance from Paramatta (the *habitat* cited for *smaragdula*), and under those circumstances it seems hardly safe to describe it as a new species.

The following tabulation shows the characters by which the *Diphucephalæ* known to me may be distinguished:—

A. Legs red.

B. Longitudinal sulcus of pronotum even and narrow (in some species subobsolete).

C. Punctuation of pronotum very fine and close (confluent).

D. Size large (4 l. or more)... .. *sericea*, Kirby

DD. Size small (less than 3 l.)

E. Scutellum not punctured *pubescens*, MacL.

EE. Scutellum punctured *puberula*, Blackb.

CC. Punctuation of pronotum not as C.

D. Base of elytra widely testaceous *pulcherrima*, Blackb.

DD. Base of elytra not testaceous

E. Lateral margins of elytra strongly dentate in the middle

- EE. Lateral margins of elytra at most feebly angular in the middle *ignota*, *Macl.*
- F. Sculpture of elytra obsolete around the apex *nitens*, *Macl.*
- FF. Sculpture of elytra uniform, or nearly so *rufipes*, *Waterh.*
- BB. Longitudinal sulcus of pronotum very wide and deep; lateral sulci large and approximating to each other.
- C. Pubescence of elytra not running in conspicuous vittæ.
- D. Size very large (5 l.) *spretæ*, *Blackb.*
- DD. Size much smaller (4l. or less) *nitidicollis*, *Macl.*
- CC. Pubescence of elytra running in conspicuous vittæ.
- D Elytra very coarsely punctulate; red with greenish gloss *richmondia*, *Macl.*
- DD. Elytra less coarsely punctulate, green *lineata*, *Boisd.*
- BBB. Longitudinal sulcus of pronotum double at base *minima*, *Macl.*
- AA. Legs metallic, and of dark colour.
- B. Elytra red *castanoptera*, *Waterh.*
- BB. Elytra metallic.
- C. Longitudinal sulcus of pronotum not double in hind part.
- D. Front tibiæ unarmed externally above apical process.
- E. Inner margins of clypeal emargination parallel or subparallel in male. Elytral punctures deep and well-defined.
- F. Pronotum somewhat strongly and less finely punctured *beryllina*, *Burm.*
- FF. Pronotum very finely and feebly punctulate.
- G. Pygidium of female with a large, deep impression *Hopei*, *Waterh.*
- GG. Pygidium of female even *furcata*, *Guér.*
- EE. Inner margins of clypeal emargination strongly diverging in male. Elytral punctures feebler and less defined *Mastersi*, *Macl.*
- DD. Front tibiæ with an external tooth above the apical process.
- *E. Pronotum with longitudinal sulcus narrow, continuous, and even.
- F. Inner apical spur of male hind tibia small, like that of intermediate tibia; female pygidium not having an elevated flat area.

* *D. Carteri*, *Blackb.* (placed under EE), is somewhat intermediate between the two aggregates.

- G. Inner margins of clypeal emargination of male quite parallel, or even approximating towards apex.
- H. Elytral puncturation seriate, lightly impressed, and not very close Childreni, *Waterh*
- HH. Elytral puncturation very close, strongly impressed, and scarcely seriate affinis, *Waterh.*
- GG. Inner margins of clypeal emargination evidently diverging in male ... Edwardsi, *Waterh.*
- FF. Inner apical spur of male hind tibia very long; female pygidium bearing a flat elevated area colaspidooides, *Macl.*
(? *Gyll.*)
- EE. Dorsal sulcus of pronotum very different in front and hind parts, or very wide throughout.
- F. Front angles of pronotum dentate, well separated from the head.
- G. Scutellum not both very flat, and closely and finely asperate.
- H. The lateral edging of the elytra does not quite reach the base. Size very large (more than 4 l.).
- I. Middle of lateral margins of prothorax strongly dentiform elegans, *Blackb.*
- II. Middle of lateral margins of prothorax feebly angular laticeps, *Macl.*
- HH. Lateral edging of elytra normal.
- I. Punctures of pronotum isolated and well-defined, for the most part including a single granule.
- J. Lateral sulci of pronotum widely separated from longitudinal sulcus; female elytra mucronate Barnardi, *Macl.*
- JJ. Lateral sulci of pronotum nearly or quite reach the longitudinal sulcus; female elytra normal.

- K. Transversely impressed behind scutellum; apical part of pygidium nitid, with basal pilose area triangularly produced ... *aurolimbata, Blanch.*
- KK. Not having elytra and pygidium as "K."
 L. Hind part of scutellum bearing a deep, round fovea ... *pulchella, Waterh.*
- LL. Pygidium normal ... *smaragdula, Boisd.?*
- II. Punctures of pronotum feeble, ill-defined, and generally including several minute granules.
- J. Sides of elytra (viewed from the side) quite straight *rectipennis, Blackb.*
- JJ. Sides of elytra (viewed from the side) sinuate.
- K. Elytral puncturation moderately strong and not exceptionally close.
- L. Puncturation of pronotum (except fine close asperity) all but wanting... *sordida, Blackb.*
- LL. Larger punctures of pronotum quite distinct.
- M. Brilliantly nitid; longitudinal sulcus of pronotum forming a large subquadrate cavity in front of base ... *quadratigera, Blanch.*
- MM. Much less nitid; longitudinal sulcus of pronotum smaller and not quadrate ... *angusticeps, MacI.*

- KK. Elytral puncturation exceptionally fine and close crebra, *Blackb.*
- GG. Scutellum very flat and even, closely and finely asperate.
- H. Elytra normally (at most) costate.
- I. Sculpture of head and pronotum strongly of subareolate character
- II. No distinct areolæ, but only fine close asperity, forming sculpture of head and pronotum Carteri, *Blackb.*
- HH. Elytra strongly costate prasina, *Macl.*
- FF. Front angles of pronotum obtuse and not at all prominent rugosa, *Boisd.*
- CC. Longitudinal sulcus of pronotum doubled in basal part.
- D. Front tibiæ without any external tooth above the apical projection parvula, *Waterh.*
- DD. An external tooth on front tibiæ above the apical projection.
- E. Pronotum more or less nitid, its puncturation not very close and fine.
- F. The two parts of the longitudinal sulcus of pronotum separated by a sharp strong ridge aurulenta, *Kirby*
- FF. The two parts of the longitudinal sulcus of pronotum separated by a feebly-raised obtuse ridge.
- G. Elytra more closely and less coarsely punctulate
- GG. Elytra more coarsely and less closely punctulate purpureitarsis, *Macl.*
- EE. Pronotum subopaque, owing to the very fine and close asperity of its surface obsoleta, *Macl.*
- EE. pygmæa, *Waterh.*
- D. puberula*, sp. nov. Minus nitida; viridis, antennis clypeo pedibusque testaceo-rufis; supra pube sat densa brevi adpressa fulva vestita (hac in pygidio et in corpore subtus dilutiori magis densa); capite (ut pronotum) confertim subtiliter aspere punctulato; prothorace sat transverso, supra longitudinaliter anguste leviter canaliculato, sulcis lateralibus parvis (inter se remotis), antice fortiter

angustato, lateribus minus arcuatis ad mediam partem dentato-angulatis pone medium leviter sinuatis, angulis posticis subrectis; scutello subtiliter punctulato; elytris confertim subtiliter aspere punctulatis, vix manifeste costulatis; tibiis anticis extus antice bidentatis.

Maris clypeo sat producto, quadrato, angulatim emarginato. Feminae clypeo minus fortiter minus angulatim emarginato; elytris ad apicem haud mucronatis. Long., $2\frac{1}{2}$ l.; lat. $1\frac{2}{5}$ l.

Closely allied to *D. pubescens*, Macl., but easily distinguishable by its smaller and punctulate scutellum, and by the non-mucronate apex of the elytra in the female. This species is confused in the Macleay collection with *D. pubescens*, Macl., but it is the one of the two that does not agree with Macleay's description of *pubescens*.

N. Queensland (Kuranda); taken by Mr. Dodd.

D. pulcherrima, sp. nov. Mas. Nitida, lætissime viridis, antennis (clava nigra exceptis) palpis pedibus (tarsis omnibus et tibiis posticis plus minusve infuscatis exceptis) et elytrorum parte tertia basali (sutura viridi excepta) clare testaceis; capite, pronoti lateribus, pygidio, et corpore subtus, setis minutis adpressis testaceo-griseis densissime vestitis; clypeo sat producto, quadrato, antice late leviter emarginato; capite crebre subaspere punctulato; prothorace leviter transverso, supra longitudinaliter anguste canaliculato, transversim prope marginem lateralem breviter sulcato, antice fortiter angustato, minus crebre (latera versus confertim subaspere) subfortiter punctulato (puncturis simplicibus), lateribus arcuatis vix sinuatis pone medium angulatis nec dentatis, angulis posticis subrectis (vix obtusis); elytris subseriatim subrugulose fortiter punctulatis, costis manifestis circiter 4 instructis; tibiis anticis extus antice bidentatis.

The remarkable colouring of this beautiful species separates it widely from all its described congeners. Long., $3\frac{1}{2}$ l.; lat., $1\frac{3}{5}$ l.

N. Queensland (Cairns). Sent by Mr. French.

D. rectipennis, sp. nov. Mas. Sat nitida: sat angusta; elongata; cœrula, purpureo-tincta, antennis nigris; supra parce subtus sat crebre albido-pubescens; capite crebre subtiliter ruguloso; clypeo lato, transversim quadrato, antice reflexo et sat profunde emarginato; prothorace minus transverso, supra obscure subareolato (areolis granula minuta nonnulla includentibus), sulco longitudinali simplici sat profundo ab apice ad basin gradatim latiori, sulcis lateralibus sat profundis supra haud plane conjunctis, lateribus in medio dentato-angulatis, angulis

anticis leviter dentiformibus posticis obtuse rectis; scutello minus æquali vix perspicue punctulato; elytris modice [fere ut *D. colaspidoïdis*, Macl. (? Gyll.)] sculpturatis, lateribus rectis; tibiis anticis extus antice modice (ut *D. Edwardsi*, Waterh.), bidentatis, intus haud productis. Long., 3 l.; lat., $1\frac{1}{2}$ l.

Remarkable for the straightness of the margin of the elytra, which is more straight even than that of *D. pulchella*. The present insect resembles *pulchella* in some respects, but its pronotum is very differently sculptured—the sculpture having an areolated appearance after the manner of that of *D. Spencei*, Waterh., and others—and the longitudinal sulcus of the pronotum is in the hind part very much wider than that of *pulchella*, and continues to widen quite to the actual hind margin of the segment. The colour seems to change from blue to green, according to the point of view from which the specimen is looked at. The bidentation of the front tibiæ is of the character of the same in *D. Edwardsi*, rather than in *D. colaspidoïdes*.

Australia; I do not know exact *habitat*; unique in my collection.

D. sordida, sp. nov. Sat nitida; obscure cuprea nonnihil viridicans, vel ænea, antennis palpisque obscure ferrugineis; supra sat sparsim subtus magis crebre albidopubescens; capite crebre subtiliter punctulato, puncturis nonnullis majoribus vix impressis; prothorace sat transverso, supra sat obsolete subareolato (areolis granula minuta nonnulla includentibus), sulco longitudinali simplici sat profundo ab apice ad basin gradatim latiori, sulcis lateralibus sat profundis supra vix plane conjunctis, lateribus in medio angulatis vix dentatis, angulis anticis manifeste prominentibus vix dentiformibus posticis obtuse subrectis; scutello longitudinaliter canaliculato, postice nonnihil impresso, vix manifeste punctulato; elytris modice [fere ut *D. colaspidoïdes*, Macl. (? Gyll.)] sculpturatis, lateribus sinuatis; tibiis anticis extus antice modice (ut *D. Edwardsi*, Waterh.) bidentatis, intus haud productis.

Maris clypeo ut præcedentis (*D. rectipennis*, Blackb.); feminae antice leviter sinuatim emarginato. Long., $2\frac{3}{4}$ - $3\frac{1}{2}$ l.; lat., $1\frac{1}{2}$ - $1\frac{3}{5}$ l.

This species stands unnamed in the Macleay Museum. It is of an obscure dingy-copper or bronzy colour, with dull greenish reflexions, the green somewhat more pronounced on the under-surface. It is especially characterized by the extreme faintness of the quasi-areolation of its pronotum. It

does not seem very closely allied to any other species known to me. I have taken it in some numbers.

New South Wales; Blue Mountains.

D. crebra, sp. nov. Mas. Sat nitida; supra læte viridis, subtus cyanea, antennis (clava obscura excepta) ferrugineis; supra sat sparsim subtus magis crebre albido-pubescentibus; capite crebre subtilissime aspera; clypeo minus lato, modice producto, antice angulatim sat fortiter emarginato; prothorace sat transverso, supra obscure subareolato (areolis granula minuta nonnulla includentibus), sulco longitudinali ab apice ad basin gradatim latiori (parte postica fere subquadrata), sulcis lateralibus sat profundis supra (certo adspectu) conjunctis, lateribus in medio angulatis haud plane dentatis, angulis anticis subdentiformibus posticis sat rectis; scutello longitudinaliter canaliculato, subtiliter punctulato; elytris crebre minus fortiter [quam *D. colaspidoïdis*, Macl. (? Gyll.), multo magis crebre minus fortiter] sculpturatis, lateribus leviter sinuatis; tibiis anticis antice extus leviter bidentatis, intus inermibus. Long., $2\frac{1}{5}$ l.: lat., $1\frac{1}{10}$ l.

The sculpture of the elytra of this species is not much different from that of *D. pygmaea*, Waterh. My specimen was sent to me by Mr. Lea, without indication of exact *habitat*, as *D. purpureitarsis*, Macl, which, however, has widely different sculpture of the pronotum.

Australia.

D. Carteri, sp. nov. Mas. Sat nitida: obscure viridis, plus minusve aureo-micans, antennis pedibusque picescentibus; supra sat sparsim subtus magis crebre albido-pubescentibus; capite cum pronoto confertim subtilissime aspero; clypeo lato, transversim quadrato, antice reflexo sat profunde emarginato; prothorace sat fortiter transverso, supra sulco longitudinali subobsoleto sed sat lato, sulcis lateralibus sat magnis vix profundis supra nullo modo conjunctis lateribus in medio angulatis (angulis subdentiformibus), angulis anticis subdentiformibus posticis subrectis; scutello sat plano sat æquali, confertim aspero; elytris crebre minus fortiter [quam *D. colaspidoïdis*, Macl. (? Gyll.) multo magis crebre paulo minus fortiter] punctulatis, vix perspicue costulatis, lateribus sinuatis, tibiis, anticis antice extus bidentatis intus inermibus. Long., $2\frac{3}{4}$ l.: lat., $1\frac{1}{2}$ l.

Allied to *D. Spencei*, Waterh., but much less strongly sculptured, and of duller colouring. The longitudinal sulcus of the pronotum is remarkably faint, and does not increase in width hindward in any considerable degree. Such as it is.

however, this sulcus is distinctly wide, but to a casual glance it does not appear very much different from that of some species with a faint but (when closely examined) much narrower sulcus.

New South Wales; Kosciusko.

SERICOIDES.

AUTOMOLUS.

I furnished some preliminary notes on this genus in the preceding memoir of the present series (T.R.S.S.A., 1905), in the course of which I pointed out that its essential feature of distinction from *Liparetrus* is in my opinion the structure of its front tibiae. Subsequent observation has shown that this same character distinguishes it from all the other known Australian genera of *Sericoid Melolonthides*, except *Caulobius* and the very widely separated genus *Mæchidius*. *Caulobius* was founded by Le Guillou (Rev. Zool., 1844, p. 224), for a species from Hobart which he named *villosus*,* and of which I have examples from the locality cited, agreeing perfectly with the descriptions, both generic and specific. Blanchard (Cat. Coll. Ent., 1850) states that that species is identical with *Silopa pubescens*, Er., and *Omaloptia villigera*, Hombr., and Jacq. (both described two years previously to Le Guillou's description). Blanchard's authority is not conclusive in respect of Erichson's species, and as the descriptions do not agree (*e.g.*, Erichson makes the claws of *pubescens* bifid) he is no doubt mistaken in respect of *pubescens*. But as he doubtless had the collection of Hombrot and Jacquinet before him, his authority ought, I think, to be accepted for the statement that *O. villigera* is a *Caulobius*, and, that being granted, there can be little doubt that he is right in identifying it with Le Guillou's insect, which must, therefore, stand as *Caulobius (Omaloptia) villiger*, Hombr. and Jacq. In a former memoir (Tr.R.S.S.A., 1898), I associated provisionally with *C. villiger* several new species that appeared to me (chiefly on account of different *facies*) not unlikely to be eventually regarded as generically distinct from it. I am still of the same opinion regarding these insects, but the unquestionably close structural alliance between *Automolus* and *Caulobius villiger* (in spite of great difference of *facies*) only recently observed by me, aggravates the generic difficulty. The species described as *Caulobii* (?) in my former memoir

* I may remark in passing that by a clerical error I called this species "*C. pubescens*, Le Guill.," instead of "*C. villosus*, Le Guill.," in Tr.R.S.S.A., 1898, p. 49. I hope that anyone having occasion to refer to the memoir in which this *lapsus calami* occurs will be good enough to correct it.

are in facies intermediate between *Automolus* and *Caulobius villiger*, in view of which I regard it as possible that the two may eventually have to be merged in one aggregate, the name *Automolus* being dropped as a synonym of *Caulobius*. As, however, it is easy to distinguish the *Automoli* from *C. villiger* and the species I have associated with it, by the elytra of the former leaving the greater part of the propygidium exposed, while those of the latter almost or quite cover the propygidium, it is convenient to maintain both names provisionally. The following tabulation will enable the student to distinguish the species I regard as *Automoli* and *Caulobii* from the rest of the genera that seem to me to form with them a natural group, and also from all other known Australian genera of *Sericoides*.

- | | |
|--|-------------------------|
| A. Claws simple. | |
| B. Prosternal sutures closed. | |
| C. Eyes small, not (or scarcely) prominent, and very conspicuously granulate. | |
| D. Body winged. | |
| E. Front tibiæ not as in EE. | |
| F. Elytral not striped with conspicuous wide pubescent vittæ. | |
| G. Elytra not regularly striate. | |
| H. Clypeus strongly margined in front. ... | Liparetrus |
| HH. Clypeus not (or scarcely) margined in front | Comophorus |
| GG. Elytra regularly and strongly striate ... | Microthopus |
| FF. Elytra striped with conspicuous wide pubescent vittæ ... | Haplopsis |
| EE. Front tibiæ having externally a straight margin between two subapical and one basal tooth. | |
| F. Elytra leaving a large part of the propygidium exposed | Automolus |
| FF. Elytra almost or quite covering the propygidium | Caulobius |
| DD. Body apterous ... | Callabonica |
| CC. Eyes not as in the above genera | Colpochila & its allies |
| BB. Prosternal sutures open to receive the antennæ ... | Mæchidius |
| AA. Claws not simple ... | Heteronyx & its allies |

I refer, then, to *Automolus* as distinguished from *Caulobius*, all the known Australian *Sericoides* having the tibial structure mentioned above, and having the greater part of their propygidium not covered by the elytra. This distinction

is perhaps open to objection on the ground that accidental circumstances—such as distortion—may affect its reliability; but, nevertheless, it is found on examination that the principal part of the propygidium is, in the case of *Caulobius*, a surface, from its want of sculpture and vestiture, evidently designed to be a covered part of the body, while in *Automolus* the sculpture and vestiture are evidently those of an exposed segment, and are more or less uniform with those of the pygidium.

The antennæ of *Automolus* are not easy to examine, the joints between the 2nd and the club being very short, and their sutures difficult to distinguish. When paucity of specimens forbids the removal of an antenna I have been unable to arrive at certainty as to the number of joints of the antennæ in the species before me. I have not, therefore, been able to use this character in tabulating the *Automoli*, but I can say that the antennæ are by no means of uniform structure, there being in most of the species eight joints only, of which three form the club, while in at least one species there are certainly nine joints, of which three form the club, and in two species known to me the club (of at least one sex) consists of four joints.

The *Automoli* have a most remarkable sexual character in the elytra of the female, which appears to have been overlooked in the descriptions of all the hitherto described species. This consists in an elevated nitid space (varying in size and position with the species), which in some (*e.g.*, *poverus*, Blanch.) is extremely conspicuous; while in others it is small enough to be easily disregarded. Other sexual characters are found in the greater elongation of the antennal flabellum and peculiarities (very pronounced in some species) in the front tarsi of the male.

According to Burmeister (who uses the name "*Liparetrida*" for the aggregate, which Lacordaire—and I in these memoirs—call "*Sericoides*") the genera *Automolus* and *Caulobius* belong to different sub-aggregates distinguished by the comparative length of the ventral segments—the 5th segment in the former being longer than, and in the latter equal to, the 4th. My observations show that there is an evident variation in this respect in closely-allied species, corresponding to the variation in the size and prominence of the propygidium on the dorsal surface—so that Burmeister's distinction between *Automolus* and *Caulobius* is in reality the same that I have indicated in the tabulation above. I cannot, however, regard it as of sufficient importance to be used in forming groups of genera—indeed, as already remarked, I doubt its being even generic.

It should be further noted that the elytra of the typical *Automoli* have a characteristic outline. Their lateral margin is more or less strongly sinuate, and they are narrowed behind in such fashion that outside a short apical portion of them the surface of the abdomen is to a greater or less extent visible on either side. In *Caulobius villiger*, and in the other species that I now attribute to *Caulobius*, the lateral margins of the elytra are straight, or almost straight, and the elytra are not narrowed hindward; but one which I attributed formerly to *Caulobius*, and which I now transfer to *Automolus* on account of its exposed propygidium [*A. (Caulobius) evanesceus*], has elytra intermediate in form between those of a typical *Automolus* and of *Caulobius villiger*.

It appears to me quite possible that when both sexes are known of all the species which I now place in *Automolus* and *Caulobius* it may be found necessary to form, for species that do not appear quite at home in either of those genera, at least one new genus. Meanwhile, the tabulation given above will enable the student to assign without hesitation any of them to the genus in which I should place it.

Hitherto only the typical species (*angustulus*, Burm.) has been referred to *Automolus*, but 17 other names, which appear to me clearly referable to this genus, have been given to species that have been attributed by their authors to *Liparetrus* or *Caulobius*. Three of these names, however, I believe to be synonyms, viz., *Automolus (Liparetrus) basalis*, Macl. (nec. Blanch.) = *bicolor*: Blackb., *Automolus (Liparetrus) Cooki*; Macl. = *depressus*, Blanch., *Automolus (Liparetrus) unicolor*, Macl. = *humilis*, Blanch., female. I regard it as barely possible that also *Automolus (Liparetrus) alpicola*, Blackb. = *angustulus*, Burm. This synonymy will be found more fully discussed below. I therefore regard *Automolus* as consisting of 15 species, already described, and to these I have now to add 6 new species, bringing the number of Australian *Automoli* up to 21, all of which I believe that I know, except *angustulus*, Burm.

The following is a tabulation of the distinctive characters of the species that I place in the genus *Automolus*:—

- | | | |
|-----|---|-----------------|
| A. | Lateral part of elytra vertical, its limits defined both above and below. | |
| | Antennal club four-jointed in both sexes, so far as known. | |
| B. | Pilosity of elytra as long as of pronotum | hispidus, Macl. |
| BB. | Pilosity of elytra much shorter ... | aureus, Blackb. |
| AA. | Lateral part of elytra not as in A. | |
| | Antennal club, so far as known, only three-jointed in both sexes. | |

- B. Head and pronotum with long dense, generally erect, pilosity.
- C. Pygidium clothed with fine hairs.
- D. Pilosity of pronotum dark, at least in middle part of disc.
- E. Elytra red, in some examples somewhat blackish along base.
- F. Pilosity of propygidium and pygidium long bicolor, *Blackb.*
- FF. Pilosity of propygidium and pygidium short Burmeisteri, *Macl.*
- EE. Elytra black.
- * F. Two rows of punctures in each of the elytral striæ... .. striatipennis, *Macl.*
- FF. Elytra not having striæ furnished with two rows of punctures funereus, *Blackb.*
- DD. Pilosity of pronotum entirely of pale colour.
- E. Nitid area on elytra of female is sublateral and extends from base to apex semitifer, *Blackb.*
- EE. Nitid area on elytra of female is sublateral and subapical (a sharply-limited, large, strong convexity) poverus, *Blanch.*
- EEE. Nitid area on elytra of female much smaller, at most not a sharply-limited strong convexity.
- F. Elytra red, or, at any rate, only blackish across base.
- G. Clypeus much produced in both sexes. Elytra not closely punctured. Male front tarsi very thick alpicola, *Blackb.*
- GG. Clypeus much less produced. Elytra closely punctured. Male front tarsi much less thickened.
- H. Pubescence of propygidium and pygidium close and entirely adpressed ordinatus, *Macl.*
- HH. Pubescence of propygidium erect, finer, and less close depressus, *Blanch.*
- FF. Elytra black, with an oblique red area on disc pictus, *Blackb.*
- CC. Pygidium clothed with coarse scale-like setæ valgoides, *Blanch.*
- BB. Head and pronotum clothed with fine, erect, very short, and extremely dense pilosity irrasus, *Blackb.*

* I accidentally omitted to examine the type of this insect in the Macleay Museum, and therefore have determined its place in this tabulation by a study of the description.

- BBB. Head and pronotum with little pilosity, at most fine adpressed sparse hairs.
- C. Punctures of pronotum very coarse and by no means close *pygmaeus*, *Macl.*
(? *Burm.*)
- CC. Punctures of pronotum not as C.
- D. Propygidium of comparatively small size.
- E. Clypeus of male much narrowed forward and rounded at apex *evanescens*, *Blackb.*
- EE. Clypeus of male wider, shorter, and tridentate at apex *opaculus*, *Blackb.*
- DD. Propygidium enormous.
- E. Antennæ entirely testaceous... .. *major*, *Blackb.*
- EE. Club of antennæ black.
- F. The depressed part of pygidium bears a longitudinal sulcus *granulatus*, *Blackb.*
- FF. The depressed part of pygidium not longitudinally sulcate *humilis*, *Blanch.*

I shall now furnish notes on species already described, and add descriptions of new species.

A. (Liparetrus) hispidus, *Macl.* I have examined the presumable type of this species in the Macleay Museum. It is, I think, a male. Two specimens in my own collection are certainly male and female. The elytra of the female bear a strongly convex, highly nitid, glabrous elongate sublateral area, commencing at about the middle of the length and bent inward near the apex to join the subapical callus. It does not differ much from the male in other respects. In both sexes the antennal flabellum has four joints, which are a little shorter in the female than in the male.

A. (Liparetrus) aureus, *Blackb.* This species remains unique in the South Australian Museum. It is near to *A. hispidus*, *Macl.*, but the pilosity of its elytra is so much shorter than in that insect that I have little doubt of its specific validity. The specimen is a male, and it is therefore, though probable, not certain that its female has antennæ with a four-jointed flabellum.

A. (Liparetrus) bicolor, *Blackb.* Identical with specimens named *L. basalis*, *Blanch.*, in the Australian Museum. I have already (*Tr. Roy. Soc. S.A.*, 1905, p. 312) stated my reasons for thinking that Macleay was mistaken in this determination. This insect is somewhat close to *A. (Liparetrus) depressus*, *Blanch.*, but is readily distinguishable by the very much darker pilosity of its pronotum and the notably coarser sculpture of its elytra.

A. (Liparetrus) Burmeisteri, Macl. I have identified this species by comparison with the presumable type in the Macleay Museum.

A. (Liparetrus) alpicola, Blackb. I have already (Tr. Roy. Soc., 1905, p. 332) discussed the possibility of this being identical with *A. angustulus*, Burm. (the type of the genus).

A. (Liparetrus) ordinatus, Macl. This species is near to *A. (Liparetrus) depressus*, Blanch. Macleay distinguishes it by its pilosity being "decumbent." I believe this to be a satisfactory distinction when applied to specimens in their natural condition, but I find that the pilosity on *depressus* is easily made decumbent by artificial means (e.g., passing a wet brush over it). The dense adpressed pilosity of the propygidium and pygidium of *ordinatus*, however, is essentially different from the finer, erect, and much less close pilosity of the corresponding segments in *depressus*.

A. (Liparetrus) depressus, Blanch. I have before me a long series of *Automoli* from almost all parts of New South Wales, Queensland, and Victoria, among which *depressus* is undoubtedly included. They vary considerably in size and somewhat in colour, but I cannot find characters in them to indicate more than one species. Some of them from North Queensland are of small size and evidently identical with the presumable type of *A. (Liparetrus) Cooki*, Macl., in the Macleay Museum, which Macleay distinguishes from *depressus* only by assigning a smaller size to it.

A. (Liparetrus) pygmaeus, Macl. (? Burm.). The specimen before me of this insect is certainly identical with that which stands in the Australian Museum as *L. pygmaeus*, Burm., and is, therefore, presumably that which Macleay described under that name in his Monograph of *Liparetrus*. In that case Macleay was mistaken in placing the species among those with only 8 antennal joints, as the stipes undoubtedly has a minute 4th joint, closely connected with the basal joint of the lamella. Whether Macleay's identification was correct, appears, however, doubtful in the extreme, not only because Burmeister, as the author of *Automolus*, would have been unlikely to place one of its species in *Liparetrus*, but also because Burmeister's description does not agree with Macleay's *pygmaeus*, representing it as *inter alia* smaller, with less coarse punctures (*nadelstichpuncten*), forming on the elytra regular (Macleay calls them "irregular") rows. Nevertheless, as among extensive collections from Western Australia that I have examined I have not seen any other species that could possibly be *pygmaeus*, Burm., I think this one may reasonably be called provisionally "*pygmaeus*, Macl. (? Burm.)."

A. (Liparetrus) humilis, Blanch. The species that I identify with this name is so identified in the Macleay Museum, and is doubtless that described as *humilis* in Macleay's Monograph. I have specimens from various localities (from Sydney to tropical Queensland) in eastern Australia.

A. (Liparetrus) unicolor, Masters. This was originally described by Macleay as *L. concolor* (*nom. præocc.*). It is found in the same localities as *A. humilis*, from which I cannot distinguish it, except by colour and sexual characters, and of which I have no doubt it is the female.

A. funereus, sp. nov. Mas. Ovatus: subnitidus; niger, antennis (clava excepta) rufescentibus; pilis subtilibus erectis sat elongatis (in elytris brevioribus) vestitus (his in capite pronoto elytrisque nigris, in aliis partibus albidis); antennis 8-articulatis (?), clava quam articuli ceteri conjuncti haud breviori; clypeo antice subtruncato (vix sinuato) modice reflexo, crebre subgranulose ut frons (hac convexa) punctulato; prothorace fortiter transverso, supra æquali, ut frons punctulato, antice sat angustato, lateribus leviter arcuatis; elytris crebre minus subtiliter subseriatim punctulatis, vix manifeste bicostatis; propygidio crebre, pygidio sparsius (hoc æquali) fortiter punctulatis; tibiis anticis ad apicem bi- (ad basin uni-) dentatis; tarsis anticis sat fortiter elongatis, posteriorum articulo. 2° quam basalis plus quam duplo longiori. Fem. latet. Long., 2 l.; lat., 1 $\frac{1}{5}$ l.

This species is readily distinguishable from its congeners by the characters cited in the tabulation. As it is unique in my collection I cannot bring myself to sacrifice an antenna for separate examination, but I am almost sure that there are only three joints in the very short stipes.

New South Wales.

A. semitifer, sp. nov. Fem. Ovatus: subnitidus; nigro-piceus, antennis palpis elytris (his circa scutellum infuscatis) et abdomine rufis, pedibus plus minusve rufescentibus; pilis elongatis erectis pallidis (his in pronoto medio vix, in elytrorum lateribus manifeste, infuscatis) vestitus; antennis 8-articulatis, clava quam articuli ceteri conjuncti parum breviori; clypeo antice late subtruncatim rotundato, parum reflexo, crebre sat grosse granulatum (ut frons pronotamque) punctulato; prothorace fortiter transverso, antice sat angustato, supra æquali, lateribus modice arcuatis; elytris subfortiter (versus suturam nec latera seriatim) punctulatis, sat perspicue bicostulatis, area glabra pernitida sat lata sublaterali totam longitudinem percurrenti; propygidio pygidioque (hoc

æquali) ut pronotum punctulatis; tibiis anticis ut *A. funerei*, Blackb., dentatis; tarsis anticis brevibus, posteriorum articulo 2° quam basalis vix duplo longiori. Long., $2\frac{1}{2}$ l.; lat., $1\frac{1}{4}$ l.

The pilosity of the pronotum of this species is of a somewhat darker tone of colour on the middle of the disc than elsewhere, though very different in colour from that of the preceding species. In that respect, however, the insect must be regarded as somewhat intermediate between the two aggregates which I have distinguished by the colour of the pilosity of the pronotum. The only sex known to me (the female) is, however, quite incapable of confusion with any other female *Automolus* that I have seen, on account of the presence of a wide, glabrous, and brilliantly nitid vitta near the lateral border, traversing the whole length of the elytra and dividing the otherwise uniformly pilose surface by a kind of lane which presents a very characteristic appearance if the insect be looked at obliquely from in front. I have not been able to identify the male of the species, but as I have seen four examples of the female I suspect that the other sex is among the *Automoli* before me, and is not distinguishable by any very noticeable character from the male of *A. depressus*, Blanch.

New South Wales (sent by Mr. Lea from Galston).

A. pictus, sp. nov. Mas. Ovatus; subnitidus; piceo-niger, antennis (clava excepta) palpis pedibus et in elytris macula magna discoidali ovali obliqua rufis; pilis erectis subtilibus pallidis sat elongatis vestitus; antennis 8-articulatis (?), clava quam articuli ceteri conjuncti haud breviori; clypeo antice late rotundato (vix subtruncato), sat late reflexo, crebre subgranulatim punctulato; fronte convexa, fortiter vix crebre vix rugulose punctulata; prothorace minus transverso, antice sat angustato, supra æquali, grosse minus crebre nec rugulose punctulato, lateribus parum arcuatis; elytris sat crebre sat fortiter subrugulose vix seriatim punctulatis, vix manifeste costulatis; propygidio pygidioque fere ut pronotum punctulatis; tibiis anticis ut *A. funerei*, Blackb., dentatis; tarsis anticis modice elongatis, posteriorum articulo 2° quam basalis multo longiori. Fem. latet. Long., 2 l.; lat., 1 l.

The markings on the elytra of this species (probably constant in the male) readily distinguish it. Other distinguishing characters are found in the red colour of its legs, the coarse puncturation of its pronotum, the almost complete absence of prominent lines on its elytra (of which there is no trace at all except faint indications of one near the suture).

As the species is unique in my collection I have not been able to examine the antennæ under a microscope, but I am almost sure that there are only three joints in the stipes.

North Queensland.

A. opaculus, sp. nov. Ovatus; sat opacus; piceo-niger, antennis (clava excepta) palpis et elytris (nonnullorum exemplorum) plus minusve rufescentibus; pilis subtilibus pallidis adpressis minus crebre vestitus; antennis 9-articulatis; clypeo antice breviter tridentato, cum fronte (hac minus convexa) subtiliter granulato; prothorace fortiter transverso, antice angustato, supra æquali, sparsim granulato-punctulato, lateribus arcuatis; elytris crebre subseriatim minus fortiter granulato-punctulatis, minus perspicue bicostulatis; propygidio sat crebre, pygidio minus crebre, squamoso-punctulatis; tibiis anticis ut *A. funerei*, Blackb., dentatis.

Maris quam feminae antennarum clava magis elongata, tibiis anticarum dentibus minoribus, tarsis anticis crassioribus, posticorum articulo 2° quam basalis minus quam duplo longiori.

Feminae pygidio longitudinaliter impresso: tarsorum posteriorum articulo 2° quam basalis duplo longiori. Long., $1\frac{3}{5}$ -2 l; lat., $\frac{4}{5}$ -1 l.

Its opaque dorsal surface distinguishes this species from all the preceding. It is near *A. (Caulobius) evanescens*, Blackb., from which the form of its clypeus readily separates it. The female has a small nitid sexual area on the subapical callus.

Western Australia (Perth).

A. irrasus, sp. nov. Ovatus: subnitidus: rufus, antennarum clava capite prothorace sternisque plus minusve infuscatis: pilis pallidis (his supra brevibus erectis confertim positis, subtus longioribus minus crebre positis) vestitus: antennis 8-articulatis: clypeo antice subtruncato (vix subemarginato), sat reflexo, cum fronte (hac convexa) pronotoque crebre minus subtiliter subrugulose punctulato: prothorace sat transverso, antice angustato, supra æquali, lateribus sat arcuatis: elytris obsolete striatis, confertim subseriatim nec profunde nec subtiliter punctulatis, haud costulatis: propygidio pygidioque fere ut pronotum (sed paullo minus crebre) punctulatis: tibiis anticis ut *A. funerei*, Blackb., dentatis: tarsis anticis brevibus.

Maris quam feminae antennarum clava magis elongata, tarsis anticis paullo longioribus, posticorum articulo 2° quam basalis minus quam duplo longiori.

Feminae tarsorum posteriorum articulo 2° quam basalis duplo longiori. Long., $1\frac{3}{4}$ -2 l.; lat., 1 l.

Remarkable for its almost uniform rusty-red colour, with the head, front part of pronotum, and the sterna infuscate, and by its short, erect, close, nap-like pubescence. Having only two specimens, I have not been willing to break off an antenna for examination, but I am confident that the stipes has only three joints. There is scarcely any trace of a sexual nitid space on the elytra of the female, and such as there is it can be discerned only on the subapical callus.

North Queensland.

A. major, sp. nov. Fem. Ovalis; sat opacus: castaneo-brunneus: pilis subtilibus adpressis sat brevibus minus crebre vestitus; antennis 8-articulatis, clava quam articuli ceteri conjuncti manifeste breviori: clypeo antice truncato, parum reflexo, subgrosse granulato: fronte sat convexa, cum pronoto crebre subtilius granulato-punctulata: prothorace leviter transverso, antice leviter angustato, supra æquali, lateribus sat arcuatis postice sinuatis: elytris confuse (a sutura latera versus gradatim magis grosse) rugulosis, vix perspicue costulatis, area nitida sat obsoleta in callo subapicali ornatis: propygidio (hoc quam elytra parum breviori) pygidioque (hoc æquali, fere a basi sub corpus reclinato) fortiter granulatis: tibiis anticis ut *A. funerei*, Blackb., dentatis: tarsis brevibus robustis, posteriorum articulo 2° quam basalis duplo longiori. Mas latet. Long., $3\frac{3}{4}$ l.: lat., $1\frac{1}{2}$ l.

This species is of more oval form than typical *Automoli*, which are a little more dilated hindward. The extremely strong granulation of its dorsal surface and its large size render it a very distinct species. The testaceous colour of its antennal club is unusual in the genus.

North Queensland.

COMOPHORUS.

This genus, founded by Blanchard, still contains only the one species (*testaceipennis*), which that author described. The genus is quite distinct from *Liparetrus*, though closely allied to it. There is no need to add here to what Blanchard (Cat. Coll. Ent., 1850, p. 106) has written about it.

MICROTHOPUS.

I have already discussed this genus (Tr. R. S. S. A., 1905), and as I, in doing so, had occasion to deal also, incidentally, with the three described species belonging to it, I need not add any remarks here.

HAPLOPSIS.

Only five species attributable to this genus have been described, and I have no additions to make to them. They closely resemble each other superficially, and are not likely to be confused with any species of any other genus on account of their elytra being ornamented with wide, longitudinal stripes of whitish pilosity, the intervals between which are glabrous, or nearly so. I have selected this superficial character to distinguish the genus in the tabulation of genera (*vide Automolus*), because I have not been able to discover any reliable structural character to separate *Haplopsis* from the extremely heterogeneous aggregate *Liparetrus*. Burmeister selects for this purpose the concealment of the propygidium under the elytra (or, rather, what I have pointed out above is the corresponding character on the ventral surface, viz., the shortening of the 5th ventral segment as compared with the 4th); but there is a distinct tendency in the females of *Haplopsis* to a lengthening and protrusion of the propygidium, and I have before me females of at least two species of *Haplopsis* in which the propygidium is as fully exposed as in many *Liparetri*, and the 5th ventral segment quite decidedly longer than the 4th. The most that can be made of this character, therefore, is that in *Liparetrus* the propygidium is exposed and the 5th ventral segment elongated, while in *Haplopsis* normally the propygidium is concealed, and the 5th ventral segment not longer than the 4th. The structure of the front tibiæ is intermediate between that of *Liparetrus* and *Automolus*, there being two adjacent external teeth close to the apex, and one (much smaller) about halfway between the intermediate tooth and the base of the tibia. These characters, together with the constant characteristic vestiture of the elytra, seem to indicate the generic validity of *Haplopsis*. I have already discussed the synonymy of the species described by the earlier authors (*vide* Tr.R.S.S.A., 1898, p. 48), and need not refer to it further. The following table shows the distinctive characters of the known species:—

- | | | |
|-----|--|------------------------------|
| A | Front of clypeus strongly, and decidedly angularly, emarginate in both sexes. | |
| B. | Dorsal surface blackish, scarcely metallic; pronotum and pygidium deeply punctulate | <i>lineoligera</i> , Blanch. |
| BB. | Dorsal surface quite bright-green; pronotum and pygidium very lightly punctulate | <i>viridis</i> , Blackb. |
| AA. | Front of clypeus not as A in either sex. | |

- B. Clypeus of both sexes conspicuously reflexed in front.
 C. Clypeus of male truncate in front.
 Elytra unicolorous Olliffi, *Blackb.*
 CC. Clypeus of male distinctly and widely emarginate in front.
 Elytra red towards apex grisea, *Burm.*
 BB. Clypeus in both sexes not reflexed, only narrowly margined debilis, *Blackb.*

CAULOBIUS.

I have already discussed the genus (*vide Automolus, supra*), and will here merely repeat that I cannot see my way to a better treatment of the species than I attribute to it. I am afraid the genus as here regarded is little better than a receptacle for somewhat diverse species associated on the ground of their belonging to the *Liparetrus* group without being attributable to any other of its genera than this one. The first four species (in the following tabulation) are really very close to *Automolus*, but have their propygidium quite (or largely) covered by the elytra; the remaining four species (in the tabulation) differ much in *facies* from the first four, but I cannot find satisfactory structural differences for the creation of a new genus. As in *Liparetrus* and *Automolus*, the number of antennal joints varies in *Caulobius*. The first four species and the last in the tabulation (which follows and shows characters differentiating the species that I place in *Caulobius*) have 9-jointed antennæ, while there are only 8 joints in the antennæ of the other three species.

- A. Less elongate species. Length of elytra exceeding width by about $\frac{1}{2}$ (or less) of the width.
 B. The lateral margins of the clypeus strongly sinuate-emarginate.
 C. The pronotum with very coarse sparse sculpture.
 D. Elytra very coarsely sculptured.
 Tarsi robust discedens, *Blackb.*
 DD. Elytra much less coarsely sculptured. Tarsi slender immitis, *Blackb.*
 CC. Pronotum much more closely and less coarsely sculptured rotundus, *Blackb.*
 BB. Lateral margins of clypeus not emarginate mæchidioides, *Macl.*
 AA. More elongate species. Length of elytra exceeding width by about $\frac{1}{2}$ of the width.
 B. Pronotum densely clothed with long, erect pilosity villiger, *Hombr. and Jacq.*
 BB. Pronotum not as B.
 C. Club of antennæ dark.
 D. Elytra opaque rufescens, *Blanch. (?)*
 DD. Elytra subnitid advena, *Blackb.*
 CC. Antennæ entirely pale testaceous punctulatus, *Blackb.*

C. compactus, Blackb. I find that this species is identical with that which stands in the Macleay Museum as *Liparetrus mæchidioides*, Macl., and since one of the Museum specimens is presumably the type, my name must be dropped as a synonym.

C. rufescens, Blanch. This species is described by Blanchard as being that which was figured but not described in the "Voyage au Pôle Sud" (1842), under the name *Philochlænia rufescens*. Probably the identification is correct; but, whether or not, the name *Caulobius rufescens*, Blanch., will stand. I have a species before me from Tasmania (Blanchard's locality) which agrees with the description fairly satisfactorily, but the description is not detailed enough to allow of certainty. I have, therefore, called the species "*Caulobius rufescens*, Blanch (?)." According to Burmeister, *C. rufescens*, Hombr. and Jacq., is identical with *Caulobius (Sericesthis) cervinus*, Boisd. It, however, seems very clear that *C. rufescens*, Blanch., is not identical with *C. cervinus*, Burm. (? Boisd.), as a glance at the descriptions will show, the former being called "depressed," and the latter "strongly convex, almost cylindrical." Pending the improbable production of evidence to the contrary it seems clear, therefore, that there are two distinct species, which must be called *C. cervinus*, Burm. (? Boisd.), and *C. rufescens*, Blanch. I have not seen any insect that seems likely to be the former of these, which would be difficult of identification without inspection of Burmeister's specimen.

C. advena, Blackb. When I described this species I mentioned that I had failed to arrive at certainty as to the number of joints in its antennæ, but thought there were nine joints. I have now succeeded in counting them, and can state positively that there are only eight joints.

C. immitis, sp. nov. Ovatus; subnitidus; niger vel piceo-niger, antennis (clava excepta) palpis pedibusque dilutioribus; setis brevibus fulvis vestitus, his in elytris seriatis dispositis; antennis 9-articulatis; clypeo reflexo, cum fronte granuloso, antice truncato; prothorace fortiter transverso, supra grosse rugulose punctulato, canaliculato, basi media sat lobata, lateribus sat arcuatis, angulis anticis sat acutis; elytris fortiter rugulose punctulatis et transversim nonnihil rugatis, interstitiis inæqualiter leviter subcostulatis; pygidio grosse punctulato; tibiis anticis ad apicem bi- (ad basin uni-) dentatis; tarsis anticis minus elongatis, posteriorum articulo 2° quam basalis circiter duplo longiori.

Maris antennarum clava quam stipes paullo longiori; feminae breviori. Long., $2\frac{1}{5}$ l.; lat., $1\frac{1}{5}$ l.

There are six specimens before me of this insect, and I do not find any very conspicuous sexual characters among them. In some, however, which I take to be males, the joints of the flabellum are slightly longer than the 4 joints together of the stipes, and the clypeus is a little more abruptly truncate than in others whose antennal flabellum is a little shorter. The species has a thick-set, coarsely sculptured appearance, suggestive of a lilliputian *Byrrhomorpha*, from which, however, its structural characters separate it widely, e.g., its conspicuously granulate eyes with the hind angles of the clypeus projecting considerably beyond the outline of the eyes.

Western Australia; sent by Mr. Lea and others, from Perth.

C. rotundus, sp. nov. Ovatus; latissimus; minus nitidus; obscure rufus, capite prothorace metasternoque picescentibus; setis fulvis decumbentibus minus crebre vestitus; antennis 9-articulatis; clypeo reflexo cum fronte prothoraceque sat æqualiter sat crebre minus grosse granuloso-ruguloso, antice truncato; prothorace sat fortiter transverso, æquali, basi media vix lobata, lateribus minus arcuatis, angulis anticis acutis; elytris subtilius granuloso-rugulosis, interstitiis inter se inæqualibus (horum nonnullis leviter subcostulatis); pygidio leviter subtilius punctulato; tibiis anticis ad apicem bi- (ad basin uni-) dentatis; tarsorum posticorum articulo 2° quam basalis circiter duplo longiori. Long., $2\frac{2}{5}$ l.; lat., $1\frac{2}{5}$ l.

I have seen several specimens of this insect, which include both sexes. The antennal flabellum of the male is as long as the preceding joints together: that of the female a little shorter. The species seems out of place in being associated with the very much larger and more cylindrical *C. villiger*, Hombr. and Jacq., from which it differs also in the partial exposure of its propygidium. This latter character approximates it to *Automolus*, but in all the species that I attribute to *Automolus* there is much more of the propygidium exposed, and the elytra are of different shape, as indicated in the remarks (above) on the genus *Automolus*.

New South Wales. Taken by Messrs. Carter, Lea, and Taylor; also in the South Australian Museum.

HAPLONYCHA.

I have already discussed the affinities of this genus in Proc. L.S.N.S.W., 1890, pp. 517, etc., and at the same time I furnished a tabulation of the species then known to me, and

described some new species. Since that paper was published I have had opportunity of studying a large number of additional species, and have now before me a considerable number as yet undescribed. I am still of opinion that *Colpochila* cannot be maintained as distinct from *Haplonycha*, although I think that I was mistaken in selecting the former name for use, inasmuch as *Haplonycha* seems to have been used for Boisduval's *Melolontha obesa* in Dejean's catalogue, in 1837. *Colpochila* was proposed by Erichson (1843) without description. In 1850 Blanchard furnished characters for Erichson's name, and at the same time characterized under the name *Haplonycha* an aggregate which he regarded as forming a genus allied to but distinct from *Colpochila*. I, however, can find no character mentioned in his diagnoses which distinguishes either from the other, but in an appended note it is stated that in *Haplonycha* the galea of the maxillæ is not gibbous, the labium is less quadrate, and the antennal club and clypeus are distinct in shape (but without indication of the nature of the distinction, unless reference is intended to the word "productus," which in the diagnoses is used of the clypeus of *Colpochila*, but not of *Haplonycha*, and "oblonga," which is used of the antennal club of *Haplonycha*, but not of *Colpochila*). However, these characters are, I think, of no value, though, of course, one cannot be positive about the maxillæ without dissecting all the species, which I have not been able to do. Burmeister, in 1855, treated the two aggregates as identical. Lacordaire, in 1856 (in his tabulation of the *Heteronycid* genera of the world) distinguishes *Colpochila* from *Haplonycha* by the shape of its antennal club; certainly not, in my opinion, a character of generic value, nor constant in any considerable number of species. It is quite possible that the long and somewhat diverse series of species which I attribute to *Haplonycha* may sooner or later be regarded as yielding material for the formation of several new genera. At present I am able to break those species up into several groups, distinguished from each other by easily recognizable characters: but those characters are all such as appear to me, in the Australian *Scricoides* in general, merely specific, *i.e.*, not indicative of the nature of the other characters of the insects in which they appear.

It has seemed to me, therefore, that *Haplonycha* may be dealt with most satisfactorily by dividing it into subordinate aggregates under the name of groups, a method of treatment which I adopted recently in revising *Oonthophagus* and *Liparetrus*. The species of *Haplonycha* known to me fall conveniently, I think, into eight groups, which may be distinguished as follows:—

- A. Antennæ consisting of eight joints only Group I.
- AA. Antennæ consisting of nine joints.
- B. Lateral gutter of pronotum (especially round the hind angles) wide and filled with closely-packed setiferous rugulosity Group II.
- BB. Lateral gutter of pronotum not as B.
- C. Surface of apical joint of maxillary palpi, with a large impression bordered laterally by a raised edge Group III.
- CC. Apical joint of maxillary palpi not as C.
- * D. Penultimate joint of maxillary palpi longer than antepenultimate Group IV.
- DD. Penultimate joint of maxillary palpi not (or scarcely) longer than antepenultimate.
- E. Antennal club, with more than 3 joints in both sexes... .. Group V.
- EE. Antennal club, with only 3 joints in both sexes.
- F. Species not having the pronotum and pygidium black.
- G. Perpendicular front face of clypeus, with plentiful, more or less rugulose punctures, more or less obscuring the transverse setiferous series Group VI.
- GG. Perpendicular front face of clypeus nitid, smooth, and all but unpunctured, except the transverse series of very large setiferous punctures Group VII.
- FF. Pronotum and pygidium black Group VIII.

The species which I associate together in each of the above groups are fairly homogeneous in facies, though considerably less so in respect of structural characters. More detailed remarks about the groups will be found below.

In subdividing *Haplonycha* into groups, the number of joints in the antennæ, though not, in my opinion, a character of much importance, enables two or three species with only eight antennal joints to be satisfactorily separated from the

* In the concluding species of this group the group-character is only feebly marked, but in these the dorsal surface of the body is pruinose and iridescent, which is not the case with any species known to me (of the following groups), having maxillary palpi of somewhat similar structure.

others as the first group. If the antennal characters were disregarded these species might very well be placed near *H. bella*, Blackb. The second group consists of large or very large species in which the marginal gutter of the pronotum presents the remarkable structure indicated in the tabulation, a character, however, that does not appear to be of much importance, since several species not possessing it are otherwise very close to some in the second group; it is, however, of great value for purposes of identification. The preceding two groups having been eliminated, I have arranged the remainder of the groups by means of the character that appears to me the most fundamental of those I have observed in the genus, inasmuch as well-marked differences in respect of it seem to be somewhat uniformly accompanied by other differences, such as in facies, colour, texture of elytra, etc. I refer to the structure of the maxillary palpi. Using this character I first separate as the third group a small aggregate of species having a remarkable impression on the apical joint of the maxillary palpi. The remainder of the genus I then divide into two sections ("D" and "DD" in the preceding tabulation) according as the penultimate joint of the maxillary palpi is or is not longer than the antepenultimate. It must be admitted, however, that there are a few intermediate forms in which there is little or no difference in length between these joints, but these forms will present no practical difficulty in identification, because if they be placed together it will be found that they naturally divide themselves into two aggregates, in one of which (while the penultimate joint is invariably, I think, at any rate a trifle longer than the antepenultimate) the facies is in general that of the species in which the antepenultimate joint of the palpi is *very* short, and the dorsal surface is invariably more or less brilliantly iridescent; and in the other aggregate the facies is very different (average size smaller, texture notably less fragile), and the dorsal surface is not, in any species known to me, iridescent. The aggregate "D" does not seem to lend itself to sectional division, and therefore I treat it as a single (the fourth) group. The aggregate "DD," however, is much less homogeneous, and contains a few isolated forms which I have separated as the seventh and eighth groups, the eighth consisting of three species not very much like each other, or very close to any other *Haplonycha*, but which happen to agree in presenting the unusual character of the head, pronotum, and pygidium being black; while the seventh group consists of a few species bearing a general resemblance to those of the third group, and differing from all those of the fifth, sixth, and

eighth groups by the combination of a peculiar sculpture of the perpendicular front face of the clypeus, with antennal club of only three joints in both sexes. The remainder of the section "DD" consists of species closely resembling each other (with a few exceptions) in respect of facies, but conveniently divisible into two groups (the fifth and sixth), in one of which the sides of the prothorax are sinuate behind the middle and the antennal club has four joints (the first usually much shorter than the second in the females), while in the other the sides of the prothorax are not sinuate behind the middle and the antennal club has in both sexes only three joints.

I have not found any uniform external difference between the sexes in *Haplonycha*, except in the antennal club. The lamellæ of this are longer in the males than in the females, but not different in number, although in the species in which the club has more than three lamellæ the first of them is usually much abbreviated in the female, but very rarely (I think *H. bella*, Blackb., supplies the only instance), so much abbreviated that it is not very obviously a lamella of the club.

In dealing with the species of this genus it is necessary to begin by discussing those described by the earlier authors, inasmuch as their descriptions are for the most part extremely brief and devoid of any mention of the structural characters that are the most valuable for purposes of identification. The earliest species of those subsequently attributed to *Haplonycha* are *Melolontha obesa*, Boisd., *M. Astrolabei*, Boisd., and *M. ciliata*, Boisd. (described in 1835). Burmeister subsequently described as the first of these an insect which it seems probable was not Boisduval's type, but a *Haplonycha*, believed by Burmeister to be identical with the type, and in that identification I have little doubt he was mistaken. Assuming *M. obesa* to be a *Haplonycha* (which I fear is not certain), its description happens to mention two characters that in combination are very unusual in the genus, viz., "head and thorax black" and "prothorax rugulose-punctulate." Now, Burmeister says of what he calls "*obesa*, Boisd.," that it is entirely (*ueberall*) shining castaneous-brown, and makes no reference to its prothorax being rugulose. My own opinion is that *M. obesa*, Boisd., is the species of which Burmeister described a variety as *M. gagatina*. It is one of the very few species of the genus that seems subject to considerable variation in colour (its head and prothorax are always, so far as I have observed, black, while its elytra vary from dark ferruginous to black). It is found in New South Wales, the presumable *habitat* of *M. obesa*, Boisd., and the puncturation of the pronotum is more inclined

to rugulosity than in most of its congeners. As, however, Boisduval gives no information about the antennæ of his insect, and does not mention its size, I do not propose to change the name of *H. gagatina*, Burm., but prefer to regard *M. obesa*, Boisd., as unrecognizable without a fresh description founded on the actual type (which very likely is not in existence), and accepting provisionally the bare possibility that Burmeister's statement of colour was an intentional correction of Boisduval, founded on inspection of the actual type, treat "*H. obesa*, Burm. (? Boisd.);" as the valid name of a good species. Burmeister cites *H. obesa*, Boisd. (Blanch.) as being the species which he called *obesa*, Boisd., but this was almost certainly without having seen the specimens so named by Blanchard. I believe, however, that the citation is correct, as, although Blanchard does not describe *H. obesa*, he compares other species with it in terms that are agreeable to its being *H. obesa*, Burm. *Melolontha Astrolabei*, Boisd., is, in Burmeister's opinion, probably a *Haplonycha*, from which genus I unhesitatingly exclude it, on the ground that its elytra are described as not geminate-striate. I believe it to be a *Systellogid*. *Melolontha ciliata*, Boisd., is attributed to *Haplonycha* by both Blanchard and Burmeister, the latter stating that he considers it incapable of identification. Blanchard mentions that its antennæ have only eight joints, and it is probable that that statement was founded on an inspection of the type, and therefore must not be passed over. I should say that it is very likely to be identical with *H. rugosa*, Burm., but as Boisduval implies that the insect has not geminate-striate elytra, I think it unlikely that either he or Burmeister was dealing with a true *Haplonycha*, but almost certainly with a *Frenchella*. It will be seen, then, that I reject all Boisduval's names from *Haplonycha*, believing that only one of them applied to a real *Haplonycha*, and that that (*obesa*) cannot be identified unless the type exists and can be studied. In 1842 Hope described as *Sericesthis Gouldi* an insect from Port Essington, which has been attributed to *Haplonycha* (*Colpochila*), although there is little in Hope's description to indicate its generic characters. There is, however, in the South Australian Museum a *Haplonycha*, from the neighbourhood of Port Essington, which agrees so well with Hope's description that I have no hesitation in considering it Hope's species.

Hombre and Jacquinet, in 1842, figured, under the name *tasmanica* (Voy. Pôle Sud. Atl., t. 8, f. 8), a species which has been regarded as identical with *obesa*, Boisd. I regret that I have not been able to investigate the grounds of that deter-

mination, but may say that it seems to me unlikely to be correct. The species that I have called "*H. obesa*, Burm. (? Boisd.);" does not, so far as I know, occur in Tasmania, but that which I believe to be *pectoralis*, Blanch., is found there, and is likely to be identical with *tasmanica*, H. and J., which latter is the older name. But I have not before me sufficient evidence to decide this point.

The next author who described species of *Haplonycha* was Blanchard (Cat. Coll. Ent., 1850), who may be regarded as the founder of the genus, in which he placed seven species, three of which (*striatella*, *iridescens*, and *ciliata*) I exclude from the genus on account of their elytra not being geminate-striate. Another of his species (*obscuricornis*) is so vaguely described that the striation of its elytra can scarcely be inferred, but the implication is that it is not geminate, and I have not much doubt of the insect being a *Frenchella*. I take it, therefore, that Blanchard's *obesa*, *scutalis*, and *pectoralis* only can stand in *Haplonycha*. *H. obesa*, Blanch., I have already discussed above. *H. pectoralis*, Blanch., I identify without much doubt with a species common in New South Wales. *H. scutalis*, Blanch., is scarcely distinguished from *pectoralis* except by slight colour differences, and a scutellar character to which I attribute but little value. I think I know the insect, but doubt whether it is more than a variety of *pectoralis*. Besides the species which he called *Haplonycha*, Blanchard also described two as *Colpochilæ* (*crassiventris* and *punctulata*), which must be placed in *Haplonycha* as including *Colpochila*. *Punctulata* is a well-known insect from New South Wales, but *crassiventris* is less easily identified. Burmeister says that it is probably identical with his *H. Roei* (in which case its name has priority), and in this I agree with him. The principal difficulty seems to be the much greater size quoted for *crassiventris*, but it almost disappears when it is remembered that in all Blanchard's measurements a millimetre requires to be taken as one-thirtieth of an inch. Bearing this in mind, and remembering also that the Swan River is the *habitat* quoted for both *crassiventris* and *Roei*, it seems fairly safe to treat the latter name as a synonym of the former.

The next author after Blanchard to describe species of *Haplonycha* was Burmeister (1855), who described ten species, three of which (*tasmanica*, Germ., *rugosa*, Burm., and *ciliata*, Boisd.), cannot remain in the genus, the first being a *Pachygastra*, and the other two probably identical with each other, and almost certainly belonging to *Frenchella*. I have identified five of the

remaining seven with some confidence, and the other two with more doubt. I shall refer to them more particularly in the following pages. One of them, however (*Roci*), I have already discussed above.

After Burmeister there was a long interval, until in 1871 Macleay described a single species (*H. pinguis*). There are two specimens (one of them doubtless the type) bearing this name in the Australian Museum, and they are identical with the *Haplonycha* that I have discussed above as "*obesa*, Burm. (? Boisd.)". I may here remark that *obesa*, Boisd., is represented in the South Australian Museum by the species that I am convinced is *pectoralis*, Blanch.

In 1878 Mr. Tepper described a species of this genus under the name *destructor* (Tr.R.S.S.A.), which I have already discussed (Pr.L.S.N.S.W., 1890, p. 533).

In 1888 (Pr.L.S.N.S.W., p. 913) Sir W. Macleay described *H. testaceipennis*.

In 1890 I described a number of new species (l.c.) in a paper that I have already referred to in the present memoir, and I added other species in 1892 and 1895, all of which are treated in the following pages.

In 1891 *H. nitidicollis* was described (D.E.Z., p. 263) by Nonfried. As the description is so vague as not to mention even the number of joints in the antennæ, or, indeed, any other character that would enable me to place the insect in my tabulation, I am obliged to disregard it altogether.

I have now referred to all the names (to the best of my belief) that have been up to the present time proposed for species that are, in my opinion, or have been treated by their authors as members of this genus (including *Colpochila*). Of those (43 in number) I have indicated 7 as representing species that cannot remain in *Haplonycha*, 3 as synonyms, and 2 concerning which I have not sufficient data for forming any decided opinion. There consequently remain 31 names which I regard as representing valid species of *Haplonycha*. I have now to add the descriptions of 29 new species, bringing the total of this genus to the formidable number 60, the distinctive characters of which are displayed in the following tabulations:—

GROUP I.

[Antennæ consisting of only eight joints.]

- A. Pronotum not having a fringe of long
pilosity immediately within the basal
and apical margins.
- B. Head very finely and closely (con-
fluently) punctulate. Sides of pro-
thorax not sinuate behind middle... ruficeps, Burm.

- B. Head much less finely, and not nearly confluent, punctured. Sides of prothorax sinuate behind middle *neglecta*, *Blackb.*
- AA. Pronotum having a fringe of long pilosity immediately within the basal and apical margins *crinita*, *Burm.*

GROUP II.

[Antennæ of nine joints. Lateral gutter of pronotum (especially round hind angles) filled with closely packed setiferous punctures or granules.]

- A. Antennal club, with more than 3 lamellæ in both sexes.
- B. 3rd joint of antennæ longer than 2nd joint.
- C. Disc of pronotum and of pygidium non-pilose.
- D. Punctures of elytra much finer and more sparse than in the next two species *antennalis*, *Blackb.*
- DD. Punctures of elytra much stronger.
- E. Joint 3 of male antenna dentate near apex, joint 1 of female flabellum little shorter than 2 *laminata*, *Blackb.*
- EE. Joint 3 of male antenna simple; joint 1 of female flabellum scarcely more than half 2 *dubia*, *Blackb.*
- CC. Disc of pronotum and of pygidium pilose *pilosa*, *Blackb.*
- BB. 3rd joint of antennæ not longer than 2nd joint.
- C. Pygidium carinate, but little convex, and conspicuously punctulate *carinata*, *Blackb.*
- CC. Pygidium non-carinate, strongly convex, and scarcely punctulate.
- D. Pygidium very strongly gibbous; joint 1 of female flabellum about half-length of 3 *campestris*, *Blackb.*
- DD. Pygidium scarcely gibbous; joint 1 of female flabellum scarcely shorter than 3 *fortis*, *Blackb.*
- AA. Antennal club in both sexes, with only 3 lamellæ.
- B. Base and apex of pronotum fringed with long hairs immediately within the marginal edging.
- C. Joint 4 of antennæ notably longer than joint 3... .. *latebricola*, *Blackb.*
- CC. Joint 4 of antennæ not longer than joint 3... ..
- D. Disc of pronotum glabrous and very sparsely punctulate *trichopyga*, *Blackb.*

- DD. Disc of pronotum pilose, and
in parts, more closely punctu-
late *crassiventris, Blanch.*
- BB. Base and apex of pronotum not
fringed with long hairs within the
marginal edging *punctulata, Blanch.*

GROUP III.

[Antennæ of nine joints. Lateral gutter of pronotum normal.
Apical joint of maxillary palpi impressed with a con-
spicuous fovea (which is margined by a fine raised edg-
ing.)]

- A. Pronotum not fringed with long erect
hairs immediately in front of its basal
edging.
- B. Lateral edging of elytra normal.
- C. Pronotum lobed in middle of base
(best seen from in front oblique-
ly), and closely and strongly punc-
tulate.
- D. Pronotum strongly gibbous; ely-
tral punctures isolated, on an
even surface *gibboscollis, Blackb.*
- DD. Pronotum much less convex;
elytral punctures run together
and mixed with confused rugu-
losity *setosa, Blackb.*
- CC. Pronotum not lobed at base, more
finely and less closely punctulate *spadix, Blackb.*
- BB. Lateral edging of elytra very
strong and thick *marginata, Blackb.*
- AA. Pronotum fringed with long, erect
hairs immediately in front of its basal
edging. *longior, Blackb.*

GROUP IV.

[Antennæ of nine joints. Lateral gutter of pronotum normal.
Apical joint of maxillary palpi not foveate. Penultimate
joint of maxillary palpi longer than antepenultimate, this
character being doubtful only in some iridescent species.]

- A. Hind angles of pronotum well defined,
strongly dilated, and reflexed *badia, Burm. (?)*
- AA. Hind angles of pronotum scarcely di-
lated.
- B. Penultimate joint of maxillary palpi
notably longer than apical joint *solida, Blackb.*
- BB. Penultimate joint of maxillary
palpi not longer than apical joint.
- C. Penultimate joint of maxillary
palpi much longer than antepen-
ultimate joint.
- D. Pronotum not continuously
fringed with long, erect hairs
immediately in front of its
basal edging.

- E. Dorsal surface of head not both strongly rugulose and clothed with long, erect hairs.
- F. Perpendicular front face of clypeus, with plentiful punctures, more or less obscuring the transverse row of setiferous punctures.
- G. Antennal club, with 4 joints in both sexes ... punctiventris, *Blackb.*
- * GG. Antennal club, with only 3 joints, at any rate in the female.
- H. Puncturation of elytra less close, similar to that of *bella*, *Blackb.*, and *pectoralis*, *Blanch.*
- I. Penultimate joint of maxillary palpi very little shorter than apical deceptor, *Blackb.*
- II. Penultimate joint of maxillary palpi very much shorter than apical Sloanei, *Blackb.*
- HH. Puncturation of elytra much more close.
- I. Joints 3 and 4 of antennæ somewhat elongate (4, especially, much longer than wide) accepta, *Blackb.*
- II. Joints 3 and 4 of antennæ very short, subtransverse punctatissima, *Blackb.*
- FF. Perpendicular front face of clypeus nitid, with only very fine sparse punctures, except the very large transverse series (antennal club 4-jointed) paradoxa, *Blackb.*
- EE. Dorsal surface of head strongly rugulose, and clothed with long, erect hairs.
- F. Form very robust; pronotum strongly declivous at base (as in *H. solida*, *Blackb.*)... firma, *Blackb.*
- FF. Form much less robust; pronotum normal (as in *H. bella*, *Blackb.*) clypealis, *Blackb.*
- DD. Pronotum continuously fringed, with very long hairs immediately in front of its basal edging amabilis, *Blackb.*

* I feel no doubt that this is the case also in respect of those males which are not known.

- CC. Penultimate joint of maxillary palpi but little (or scarcely) longer than antepenultimate. [Iridescent species.]
- D. Hind angles of prothorax entirely rounded off Gouldi, *Hope*
- DD. Hind angles of prothorax well defined.
- E. Species not having joints 3 and 4 of antennæ, both of them very short and subtransverse.
- F. Joint 4 of antennæ longer than joint 3.
- G. Size very large (about long. 14 l.) nobilis *Blackb.*
- GG. Size much smaller (long. 9 l. or less). [Antennal club of male 4-jointed.] bella, *Blackb.*
- FF. Joint 4 of antennæ slightly shorter than joint 3. [Antennal club of male with only 3 joints.] amœna, *Blackb.*
- EE. Joints 3 and 4 of antennæ very short, subtransverse pulchella, *Blackb.*

GROUP V.

[Antennæ of nine joints. Lateral gutter of pronotum normal. Apical joint of maxillary palpi not foveate. Penultimate joint of maxillary palpi shorter than antepenultimate, or sub-equal to it. In the latter case the dorsal surface not iridescent. Antennal club composed of more than three joints in both sexes.*]

- A. Large iridescent species. [Joint 3 of maxillary palpi much shorter than joint 2.]
- B. Pygidium but little nitid, closely sculptured, especially near base gigantea, *Burm. (?)*
- BB. Pygidium brilliantly nitid, its puncturation extremely sparse lucifera, *Blackb.*
- AA. Non-iridescent species; almost invariably of much smaller size.
- B. Puncturation of head sparse... .. gracilis, *Blackb.*
- BB. Puncturation of head very close, more or less confluent.
- C. Sides and base of pronotum (within the margin) and also base of elytra fringed with very long, erect hairs Mauricei, *Blackb.*

* I am quite confident that this is the case in the species (of this aggregate), of which only one sex is known to me. See the remarks on this subject under the description of *H. lucifera*, *Blackb.*

- CC. Pilosity not as in *H. Mauricei*.
- D. Basal edging of pronotum fine, and equal all across base; hind angles not dilated.
- E. Laminae of antennal club very long (in male scarcely shorter than the head) *egregia, Blackb.*
- EE. Laminae of antennal club much shorter.
- F. Base of pronotum strongly sinuate, middle part quite conspicuously lobate *sinuaticollis, Blackb.*
- FF. Base of pronotum only feebly sinuate.
- G. Pronotum strongly punctulate *rustica, Blackb.*
- GG. Pronotum finely punctulate *arvicola, Blackb.*
- DD. Basal edging of pronotum becomes notably more elevated laterally, with hind angles distinctly dilated.
- E. Scutellum concolorous with elytra.
- F. Antennal laminae more elongate (especially in female); pronotum notably more strongly punctulate... .. *electa, Blackb.*
- FF. Antennal laminae shorter; pronotum notably more finely punctulate *fraterna, Blackb.*
- EE. Scutellum black in contrast to the red-brown elytra *sabulicola, Blackb.*

GROUP VI.

[Antennæ of nine joints. Lateral gutter of pronotum normal. Apical joint of maxillary palpi not foveate. Penultimate joint of maxillary palpi shorter than antepenultimate, or sub-equal to it. In the latter case the dorsal surface not iridescent. Antennal club composed of only three joints. Pronotum not black. Perpendicular front face of clypeus with plentiful, more or less rugulose, punctures, more or less obscuring the transverse setiferous series.]

- A. Pygidium somewhat densely clothed with long, soft, pallid hairs *palpalis, Blackb.*
- AA. Pygidium not as in A.
- B. The lateral gutter of the pronotum punctulate conspicuously and continuously to the hind angles.
- C. Base of pronotum not fringed in front of its edging with erect hairs.
- D. Apical 2 joints of maxillary palpi of equal length (at any rate in female). Size large (long. 12 l.) *æqualiceps, Blackb.*

- DD. Apical joint of maxillary palpi distinctly longer than penultimate joint.
- E. Lateral outline of prothorax straight or sinuate in front of middle.
- F. Puncturation of elytra somewhat close (much like that of *H. fraterna*, Blackb., *obesa*, Burm. (?), etc. pectoralis, *Blanch. (?)*
- FF. Puncturation of elytra much less close pygmaea, *Blackb.*
- EE. Lateral outline of prothorax a continuous even curve thoracica, *Blackb.*
- CC. Base of pronotum fringed in front of its edging with long erect hairs clara, *Blackb.*
- BB. Lateral gutter of pronotum in its hinder part and round the basal angle smooth and more or less dilated.
- C. Club of antennae pallid in strong contrast to the preceding joints; clypeus very strongly reflexed destructor, *Tepper*
- CC. Antennae unicolorous; clypeus much less strongly reflexed obesa, *Burm.*

GROUP VII.

[Antennae of nine joints. Lateral gutter of pronotum normal. Apical joint of maxillary palpi not foveate. Penultimate joint of maxillary palpi shorter than antepenultimate, or sub-equal to it. In the latter case the dorsal surface of the insect not iridescent. Antennal club of only three joints. Pronotum not black. Perpendicular front face of clypeus nitid, bearing only a few very fine punctures and a single series of very large setiferous punctures.]

- A. Lateral outline of prothorax very strongly rounded.
- B. Pronotum finely and closely punctulate testaceipennis, *Macl.*
- BB. Pronotum strongly and considerably less closely punctulate faceta, *Blackb.*
- AA. Lateral outline of prothorax feebly arched Jungi, *Blackb.*

GROUP VIII.

[Antennae of nine joints. Lateral gutter of pronotum normal. Apical joint of maxillary palpi not foveate. Penultimate joint of maxillary palpi shorter than antepenultimate, or sub-equal to it. In the latter case the dorsal surface not iridescent. Antennal club of only three joints. Pronotum black.]

A. Pronotum opaque.

B. Elytra closely punctulate, piceous, or black gagatina, *Burm.*

BB. Elytra sparsely punctulate, pale testaceous, with a narrow black margin bicolor, *Blackb.*

AA. Pronotum nitid funerea, *Blackb.*

H. neglecta, sp. nov. Mas. Ovata; minus brevis; minus nitida; rufescens, elytris pallide testaceo-brunneis, iridescentibus; corpore subtus pedibusque longe fulvo-pilosis; palpis maxillariis testaceis, articulis 2° 3° que longitudine sat æqualibus (4° paullo longiori); antennis testaceis, 8-articulatis, clava 3-articulata sat elongata; clypeo modico, fortiter reflexo, cum fronte sat fortiter minus confertim punctulato; prothorace quam longiori duplo latiori antice sat fortiter angustato sparsim obsolete minus subtiliter punctulato, lateribus rotundatis, anguste marginatis, ante basin leviter sinuatis, angulis posticis obtusis; elytris leviter geminato-striatis, sparsim minus subtiliter sat æqualiter punctulatis; pygidio nitido, crebre subtilius punctulato; tarsorum posticorum articulis basilibus 2 longitudine inter se sat æqualibus. Long., 8 l., lat., 4½ l.

Fem. latet.

Near *H. ruficeps*, *Burm.*, but differing considerably from that species in puncturation—the head much more strongly and sparsely punctulate (in *ruficeps* the punctures are fine and confluent), and the pronotum much more closely. The prothorax is gently sinuate at the sides behind the middle, which it is not in *ruficeps*.

South Australia. In the South Australian Museum, from Wilmington (Burgess).

H. antennalis, sp. nov. Ovata; nitida; rufo-brunnea, nec iridescens; corpore subtus pedibus et prothoracis lateribus intra marginem fulvo-pilosis; palporum maxillarium articulo 3° quam 2^{us} et quam 4^{us} longiori; capite sat crebre vix fortiter sat rugulose, prothorace subtilius minus crebre subobsolete, elytris (his manifeste geminato-striatis) fere ut prothorax sed sat magis distincte, pygidio (hoc pernitido) haud perspicue, punctulatis; antennis 9-articulatis; prothorace quam longiori duplo latiori, postice retrorsum vix perspicue declivi, lateribus (et basis lateribus) sulco marginali (hoc granulis piliferis conferto) impressis, basi minus perspicue sinuata; elytris ad apicem suturalem haud vel vix acutis.

Maris antennarum flabello 6-articulato, quam articuli omnes præcedentes conjuncti sublongiori.

Feminae antennarum flabello 6-articulato, quam maris multo breviori, articulo flabelli 1^o quam 3^{us} circiter duplo breviori; pygidio gibbo nullo modo carinato. Long, 12-14 l.; lat., $6\frac{1}{3}$ -7 l.

An extremely distinct species, the only one known to me (of the genus) having a well-developed lateral sulcus on the prothorax, and the flabellum of the female antenna 6-jointed. The male has its antennal flabellum notably longer than in any other *Haplonycha* of the same group (known to me) except *pilosa*, Blackb., from which species it is easily separable, *inter alia*, by its pygidium, impunctulate, much more nitid, glabrous, somewhat tumid, and much more widely truncate (and not triangularly impressed) at the apex. The prothorax and elytra in both sexes are notably more nitid and finely and sparsely punctured than in the other species having a flabellum with more than three joints. The geminate striation of the elytra is very feeble, scarcely indicated except by the interstices between stria and stria of each pair being evidently convex and much narrower than the interstices between pair and pair.

Western Australia; Swan River, etc.

H. pilosa, sp. nov. Ovata, longior; subnitida; rufobrunnea, elytris subiridescentibus; corpore subtus pedibusque fulvo-pilosis, capite prothorace elytrorum basi pygidioque pilis elongatis erectis subtilibus vestitis; capite crebre rugulose, prothorace obsolete subcrebre, elytris (his geminato-striatis) sat crebre minus subtiliter, pygidio sparsim perspicue, punctulatis; antennis 9-articulatis: prothorace quam longiori duplo latiori, postice retrorsum sat late declivi, lateribus (et basis lateribus) sulco marginali (hoc granuliferis conferto) impressis, basi minus perspicue sinuata; elytris ad apicem suturalem sat fortiter denticulatis.

Maris antennarum flabello 6-articulato, quam articuli omnes præcedentes conjuncti sat longiori, arcuato; pygidio minus convexo, ad apicem profunde triangulariter impresso.

Fem. latet. Long., $11\frac{1}{2}$ l.; lat., $5\frac{1}{3}$ l.

The antennal structure at once separates this species strongly from all its known allies except *H. antennalis*, from which it differs as indicated under the heading of that species. The flabellum of its antennæ is even longer than in the corresponding sex of *antennalis*. The sparse, erect, very fine, and inconspicuous hairs on its head disc of prothorax and base of elytra are a valuable specific character.

Australia. I am not certain of the exact locality, but believe it to be Eyre Peninsula.

II. trichopyga, sp. nov. Ovata; longior; sat nitida; rufo-brunnea, supra sat iridescens; corpore subtus pedibusque fulvo-pilosis, prothorace pilis erectis elongatis fimbriato, abdomine supra (pygidio incluso) pubescenti; capite crebre sat fortiter, prothorace sparsim subtiliter, elytris (his perspicue geminato-striatis) sat fortiter minus crebre (fere ut *C. punctulata*, Blanch., sed minus crebre), pygidio sparsim subtiliter (hujus puncturis cum granulis minutis setas sat breves erectas graciles ferentibus sparsim commixtis), punctulatis; antennis 9-articulatis, articulo 4° quam 3^{ae} subbrevis; prothorace quam longiori plus quam duplo latiori, postice retrorsum sat late declivi, lateribus (et basis lateribus) sulco submarginali (hoc granulis piliferis conferto) impressis, basi modice sinuata, lateribus fortiter rotundato-ampliatis; elytris ad apicem suturalem inermibus.

Maris antennarum flabello 3-articulato, quam articuli 5 præcedentes conjuncti parum longiori; pygidio sat convexo, antice in medio longitudinaliter obsolete (vix perspicue) carinato.

Fem. latet. Long., 12 l.; lat., 5½ l.

Among the species of *Haplonycha* having a well-defined lateral prothoracic sulcus and antennæ with a 3-jointed flabellum, this species is distinguished by its pilose pygidium in combination with the prothoracic disc non-pilose and its prothorax strongly declivous behind.

Western Australia; Coolgardie.

II. latebricola, sp. nov. Ovata; minus nitida, rufo-brunnea, vix iridescens; corpore subtus pedibusque fulvo-vel cinereo-pilosis, prothorace pilis erectis elongatis fimbriato; capite crebre rugulose, prothorace sparsim subtiliter, elytris (his geminato-striatis) crebre sat fortiter, pygidio (hoc sat nitido) crebre dupliciter (*i.e.*, subtiliter et minus subtiliter), punctulatis; antennis 9-articulatis; articulo 4° quam 3^{ae}, sat longiori; prothorace quam longiori vix plus quam duplo latiori, postice retrorsum sat late declivi, lateribus (et basis lateribus) sulco submarginali (hoc granulis piliferis conferto) impressis, basi leviter sinuata, lateribus quam præcedentis (*C. trichopyga*) minus fortiter rotundato-ampliatis; elytris ad apicem suturalem inermibus.

Maris antennarum flabello 3-articulato, quam articuli 5 præcedentes conjuncti parum longiori; pygidio modice convexo.

Feminae antennarum flabello 3-articulato, quam articuli 5 præcedentes conjuncti sat breviori; pygidio quam maris magis convexo, antice in medio longitudinaliter obtuse sat perspicue carinato. Long., $11\frac{1}{2}$ -15 l.; lat., 6-7 $\frac{1}{2}$ l.

Near the preceding (*H. trichopyga*), but differing from it by its glabrous and differently sculptured pygidium, its more closely punctured elytra, more convex pronotum, differently proportioned antennal joints, etc.

Western Australia. In my own collection; also from Mr. Lea (Champion Bay).

H. spadix, sp. nov. Fem.? Ovata, minus brevis; sat nitida; rufo-brunnea, elytris clare brunneis, antennis palpisque dilutioribus; corpore subtus femoribusque longe pilosis; palpis maxillaribus sat crassis, articulis 2° 3° que longitudine inter se sat æqualibus, 4° quam hi longiori fovea magna impresso; antennis 9-articulatis, articulis 3° 4° que longitudine inter se sat æqualibus, clava 4-articulata quam articuli 2-5 conjuncti vix breviori: clypeo sat brevi, antice sat reflexo, minus crebre sat fortiter punctulato; fronte confertim subtilius punctulata: prothorace quam longiori ut 17 ad 9 latiori, antice minus angustato, supra subtilius minus crebre punctulato, lateribus sat arcuatis sat anguste marginatis, basi vix sinuata, angulis posticis rotundato-obtusis; elytris leviter geminato-striatis, fortius sat crebre punctulatis; pygidio nitido, sparsim subtiliter punctulato; tarsorum posticorum articulis basalibus 2 inter se sat æqualibus. Long., $9\frac{1}{2}$ l.; lat., $4\frac{4}{5}$ l.

A more robust and dark-coloured species than its allies in the third group: easily distinguishable by the characters cited in the tabulation. Its sex is doubtful, but I think it a female, as the male is likely to have a longer antennal flabellum.

North-west Australia (Murchison district).

H. marginata, sp. nov. Fem.? Elongato-ovata: sat nitida; testacea, capite pedibusque rufescentibus; corpore subtus femoribusque longe pilosis; palpis maxillaribus ut præcedentis (*H. spadix*); antennis fere ut præcedentis, sed articulo 3° quam 4^{us} manifeste longiori; capite fere ut præcedentis, sed clypeo minus elongato; prothorace fere ut præcedentis sed quam longiori duplo latiori, paullo magis subtiliter punctulato, basi paullo magis perspicue sinuata: elytris fere ut præcedentis sed (præsertim postice) magis subtiliter punctulatis, margine laterali fortiter incrassato; pygidio ad apicem subacuminato, minus nitido, subtiliter coriaceo et leviter sparsim punctulato; tarsis posticis ut præcedentis. Long., $8\frac{1}{2}$ l.; lat., $4\frac{1}{2}$ l.

Easily distinguishable from all the other species of its group by the very strongly thickened margin of its elytra. It is near *H. spadix*, but differs from it by numerous minor characters indicated in the diagnosis above, as well as by the remarkable lateral border of its elytra.

North Queensland (Mr. R. C. L. Perkins).

H. longior, sp. nov. Mas. Elongato-subovata; sat nitida; testacea, capite pedibusque rufescentibus; corpore subtus femoribusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} paullo (quam 4^{us} multo hoc fovea magna impresso) breviori; antennis 9-articulatis, articulis 3^o 4^o que inter se sat æqualibus, clava 4-articulata quam articuli 2-5 conjuncti sat longiori; clypeo minus lato, antice subtruncato, fortiter reflexo, sparsim punctulato; fronte confertim subtilius punctulata; prothorace quam longiori, ut 15 ad 9 latiori, antice sat angustato, supra subtilius vix crebre punctulato, lateribus minus arcuatis anguste marginatis, basi manifeste sinuata, pilis erectis fimbriata, angulis posticis obtusis; elytris fortius geminato-striatis, fortius vix crebre punctulatis; pygidio minus nitido, subtiliter subcoriaceo, sparsim subtiliter punctulato; tarsorum posteriorum articulo basali quam 2^{us} multo breviori. Long., 8 l.; lat., $3\frac{4}{5}$ l.

Narrower and less dilated hindward than its allies, its clypeus more sparsely punctulate, its pronotum fringed with erect hairs immediately in front of the basal edging, etc., etc.

North-west Australia: Roebuck Bay (Mr. F. Bishop).

H. Sloanei, sp. nov. Ovata, sat lata; minus nitida; rufo-brunnea; iridescens; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} multo longiori quam 4^{us} multo breviori; antennis 9-articulatis, articulo 4^o quam 3^{us} sat longiori, clava 3-articulata; clypeo sat brevi, modice reflexo, cum fronte crebre rugulose punctulato; prothorace quam longiori duplo latiori, antice sat angustato, supra crebrius nec profunde punctulato, lateribus sat fortiter rotundatis anguste marginatis, basi leviter sinuata, angulis posticis rotundato-obtusis; elytris leviter geminato-striatis, fortius minus crebre punctulatis; pygidio minus nitido, subtiliter subcoriaceo, leviter sat crebre punctulato, setis per brevibus erectis vestito; tarsorum posteriorum articulo basali quam 2^{us} sat breviori.

Maris antennarum flabellis articulis 2-6 conjunctis longitudine sat æqualibus, feminae paullo brevioribus. Long., 9 l.; lat., $4\frac{4}{5}$ l.

This is the insect which I mentioned (Pr.L.S.N.S.W., 1890, p. 529), as very close to *deceptor*, Blackb., but probably distinct. I had not at that time noticed the great difference in the proportions of the apical two joints of the maxillary palpi, and this character in combination with those mentioned in the note cited above satisfies me that the two are valid species.

New South Wales; Mulwala (Mr. Sloane).

H. accepta, sp. nov. Fem.? Elongato-subovata; subnitida; rufo-brunnea, elytris rufis; iridescens; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3° quam 2^{us} multo longiori, quam 4^{us} vix breviori; antennis 9-articulatis, articulo 4° quam 3^{us} sat longiori, clava 3-articulata articulis 3-6 conjunctis longitudine sat æquali; clypeo sat elongato, fortiter reflexo, crebre vix rugulose punctulato; fronte crebre rugulose punctulata; prothorace quam longiori duplo latiori, antice sat angustato, supra crebre fortius punctulato, lateribus sat fortiter rotundatis anguste marginatis, basi sinuata, angulis posticis rotundato-obtusis; elytris fortius geminato-striatis, crebre fortius (fere subrugulose) punctulatis; pygidio nitido, antice crebrius fortius punctulato in media parte longitudinaliter subgibbo, postice subcoriaceo sparsim punctulato; tarsorum posticorum articulo basali quam 2^{us} sat breviori. Long. 10 l.; lat., 5 $\frac{1}{3}$ l.

Resembles *H. Sloanei*, Blackb., in colouring, but is redder and somewhat more nitid and iridescent. Longer and narrower than *Sloanei*, with the clypeus notably longer, the joints of the palpi differently proportioned, the stipes of the antennæ longer, the elytra and pygidium differently punctured. The pygidium of the unique type bears a few very short, erect setæ, which suggest the probability of its being abraded.

Western Australia: Coolgardie.

H. punctatissima, sp. nov. Fem.? Ovata; sat brevis; subnitida; rufo-brunnea; iridescens; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3° quam 2^{us} multo longiori quam 4^{us} vix breviori; antennis 9-articulatis, articulis 3° 4° que brevibus inter se sat æqualibus, clava 3-articulata, quam articuli 2-6 conjuncti paullo breviori; clypeo minus elongato, modice reflexo, crebre fortiter punctulato; fronte confertim sat rugulose punctulata; prothorace quam longiori duplo latiori, antice sat angustato, supra crebre subtilius punctulato, lateribus fortiter rotundatis anguste marginatis, basi parum sinuata, angulis posticis late obtusis vix rotundatis; elytris

minus fortiter geminato-striatis, crebre minus fortiter punctulatis; pygidio minus nitido crebre subtilius granulato-punctulato et setis perbrevibus erectis vestito; tarsorum posticorum articulo basali quam 2^{ua} multo breviori. Long., 8 l.; lat., 4 $\frac{3}{5}$ l.

Resembles the preceding (*H. accepta*) in respect of its puncturation, but differs much by its antennal structure, as well as by its shorter clypeus, much more shortly ovate form, etc. Judging by the length of its antennal lamellæ I take the unique type to be a female. The length of those joints is about as in *accepta*, but owing to the shortness of the stipes the lamellæ are longer than the four joints preceding them.

North Queensland; given to me by Mr. French.

H. paradoxa, sp. nov. Mas. Ovata; modice elongata; nitida; rufa, elytris (his iridescentibus) palpis antennisque dilutioribus; sternis femoribusque longe fulvo pilosis, prothorace (exempli typici forsitan abrasi) haud pilis fimbriato; capite crebrius subfortiter (postice magis subtiliter), prothorace crebrius leviter, elytris (his geminato-striatis) sparsim minus fortiter, pygidio (hoc glabro coriaceo) subtiliter sat crebre, propygidio (hoc sparsim setoso) sparsim subfortiter, punctulatis; antennis 9-articulatis, flabello 4-articulato (hujus articulis quam præcedentes 5 conjuncti sat longioribus); palporum maxillarium articulo penultimo (hoc modice elongato plurisetoso ad apicem dilatato) quam antepenultimus (hoc sat robusto) multo longiori; prothorace quam longiori fere duplo latiori, antice minus angustato, transversim sat convexo, sat anguste marginato, angulis posticis obtusis, lateribus paullo pone medium leviter dilatato-rotundatis; scutello fere lævi; elytris ad apicem muticis; tarsorum posticorum articulo basali quam 2^{ua} manifeste nec multo breviori. Long., 8 l.; lat., 4 $\frac{1}{4}$ l.

An isolated species, somewhat difficult to place in the genus. Its facies, colouring, and sculpture are suggestive of *testaceipennis*, Macl. and its allies, but its maxillary palpi resemble those of the preceding species, with the penultimate joint, however, less cylindric and with more numerous setæ; its antennal club seems to associate it with *gigantea* and allied species. I know no species really close to it structurally. When both sexes of all the species of *Haplonycha* are known it may well be that this insect may have to be treated as generically distinct from them.

Western Australia; I have no record of the exact locality, but probably it was taken by my son, near Coolgardie.

H. firma, sp. nov. Fem. Robusta; sat breviter ovata; sat nitida; obscure rufobrunnea; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3° quam 2^{us} multo longiori quam 4^{us} parum breviori; antennis 9-articulatis, articulis 3° 2° que longitudine inter se sat æqualibus, clava 3-articulata (laminis articulis 2-6 conjunctis longitudine sat æqualibus); clypeo minus elongato, sat fortiter reflexo, crebre rugulose punctulato; fronte fortiter rugulosa, longe setosa; prothorace quam longiori ut 9 ad 5 latiori, antice fortiter angustato, supra sat crebre minus fortiter punctulato lateribus fortiter rotundatis sat anguste marginatis, basi sat fortiter sinuata ad latera ante marginem setosa, angulis posticis (superne visis) obtusis sat bene determinatis; elytris subfortiter geminato-striatis, fortiter crebrius punctulatis; pygidio nitido, leviter minus crebre punctulato; tarsorum posteriorum articulo basali quam 2^{us} paullo breviori. Long., 9 l.; lat., 5 l.

Though falling, in the preceding tabulation, beside *H. clypealis*, Blackb., this species is not allied to it so closely as to *H. solida*, Blackb., being of much more robust form than *clypealis*, with its pronotum strongly declivous at the base, so as to appear (viewed from the side) strongly convex. From *solida* (besides its differently sculptured head) it differs by its smaller size, much more strongly punctulate elytra, and pronotum with a setose fringe (very widely interrupted in the middle) immediately in front of the basal edging.

Western Australia: sent to me by Mr. Jung.

H. clypealis, sp. nov. Mas. Ovata; modice elongata: sat nitida; rufa vel rufobrunnea, iridescens, tibiis tarsisque infuscatis, antennis palpisque dilutioribus; corpore subtus femoribusque longe fulvo-pilosis, capite pilis elongatis erectis sparsim vestito, prothoracis marginibus omnibus et elytrorum marginibus lateralibus pilis elongatis erectis fimbriatis; capite crebre ruguloso (clypeo minus ruguloso); prothorace elytrisque (his geminato-striatis) subfortiter minus crebre, pygidio (hoc minus nitido setis perbrevis erectis vestito) minus crebre sat subtiliter, punctulatis; antennis 9-articulatis, flabello 3-articulato (hujus articulis quam præcedentes 5 conjuncti haud brevioribus); palporum maxillarium articulo penultimo (hoc elongato quam apicalis haud breviori) quam antepenultimus fere duplo longiori; prothorace quam longiori duplo latiori, antice sat angustato, transversim parum convexo, sat anguste marginato, angulis posticis obtusis, lateribus pone medium valde rotundato-ampliatis: scu-

tello sparsim punctulato; elytris ad apicem sat muticis; propygidio opaco creberrime punctulato; tarsorum posteriorum articulo basali quam 2^{us} multo breviori. Long., 9 l.; lat. 5 l.

A pretty species, with somewhat brilliant iridescence. I have a specimen from the same locality as the type which I believe to be its female; it is very much damaged and crushed, and differs from the male in the somewhat shorter flabellum of its antennæ, its pygidium gibbous near the base, and its puncturation in general somewhat closer and stronger. The most noticeable specific characters of this species seem to be its clypeus more elongate, and in front more narrowly rounded than in allied species, and the extremely strong, rounded dilatation of the sides of its prothorax behind the middle. It is rather close to *H. deceptor*, Blackb. (from Central and South Australia), but differs from that insect by, *inter alia*, its longer and anteriorly narrower clypeus, its prothorax less convex (transversely), and with sides much more strongly rotundate-ampliate, and the different proportions of its tarsal joints.

Western Australia; Coolgardie district.

H. amabilis, sp. nov. Mas. Modice elongata; nitida; rufa vel rufotestacea, iridescens; corpore subtus femoribusque longe fulvo-pilosis, prothoracis marginibus omnibus et elytrorum marginibus lateralibus pilis elongatis erectis fimbriatis; capite crebre subfortiter nec rugulose, prothorace subfortiter minus crebre, elytris (his geminato-striatis) minus crebre vix subfortiter, pygidio (hoc nitido setis elongatis erectis sparsim vestito) sparsius dupliciter (sc. puncturis sat magnis setiferis et alteris sat subtilibus), propygidio (hoc breviter setoso) sat crebre nec creberrime, punctulatis; antennis 9-articulatis, flabello 3-articulato (hujus articulis quam præcedentes 5 conjuncti haud brevioribus); palporum maxillarium articulo penultimo (hoc elongato quam apicalis sublongiori) quam antepenultimus (hoc sat gracili) multo longiori; prothorace quam longiori ut $1\frac{3}{5}$ ad 1 latiori, antice fortiter angustato, transversim parum convexo, sat anguste marginato, angulis posticis rotundatis, lateribus haud pone medium rotundato-ampliatibus; scutello sparsim punctulato; elytris ad apicem sat muticis; tarsorum posteriorum articulo basali quam 2^{us} multo breviori. Long., $9\frac{1}{2}$ l.; lat., 5 l.

Easily distinguishable from all its near allies by the sides of its prothorax not being rotundate-ampliate. This segment is very little convex (*i.e.*, not in any marked degree declivous hindward near the base). In colouring resembles *H. bella*, Blackb. I have not seen a female example.

Western Australia; taken by Mr. Lea near Bridgetown.

H. nobilis, sp. nov. Fem.? Ovata; sat elongata; subnitida; rufobrunnea; modice iridescens; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} fere longiori, quam 4^{us} parum breviori; antennis 9-articulatis, articulo 4^o quam 3^{us} sat longiori, clava 4-articulata quam articuli 2-5 conjuncti vix breviori clavæ articulo basali valde abbreviato; clypeo modice elongato, fortiter reflexo, sat crebre punctulato; fronte crebre punctulata; prothorace quam longiori duplo latiori, antice sat angustato, supra sparsius subtilius punctulato, lateribus minus arcuatis sat anguste marginatis, basi parum sinuata, angulis posticis obtusis (bene definitis); elytris subfortiter geminato-striatis, sat crebre subfortiter punctulatis; pygidio nitido, obsolete sparsim punctulato; tarsorum posticorum articulo basali quam 2^{us} multo breviori. Long., 14 l.; lat., $7\frac{1}{5}$ l.

This remarkably fine species furnishes an instance of the difficulty that occurs, in almost all large genera, of tabulating the species through the existence of one here and there that does not seem to fit in anywhere satisfactorily. Its natural place is quite clearly among the species that form my fourth group, but its maxillary palpi certainly present a difficulty in so classifying it, as the 3rd joint is decidedly not longer than the 2nd. I am not justified in breaking off a palpus for measurement, but I suspect the 2nd joint would prove to be slightly longer than the 3rd. There is, however, in the fifth group not one species known to me which cannot be at once separated from the present insect by not presenting in combination an iridescent dorsal surface and palpi with joints 2 and 3 subequal in length. I have little doubt of the unique type being a female, or of the male having a much more elongate antennal club consisting of 4 subequal lamellæ.

Western Australia; in the South Australian Museum (Muir).

H. amana, sp. nov. Mas. Elongata; leviter ovata; subnitida; rufa, elytris antennis palpisque testaceo-brunneis; iridescens; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} parum longiori, quam 4^{us} sat breviori; antennis 9-articulatis, articulo 4^o quam 3^{us} subbreviori, clava 3-articulata quam articuli 2-6 conjuncti sat longiori; clypeo minus elongato, fortiter reflexo, cum fronte crebre fortius punctulato; prothorace quam longiori duplo latiori, antice modice angustato, supra sparsim leviter punctulato, lateribus sat fortiter rotundatis, anguste marginatis, pone me-

dium sat fortiter sinuatis, basi subfortiter sinuata, angulis posticis bene definitis subdentiformibus; elytris fortius geminato-striatis, fortius sat crebre punctulatis; pygidio sat nitido crebrius dupliciter (subtiliter et minus subtiliter) leviter punctulatis; tarsorum posticorum articulo basali quam 2^{us} sat breviori. Long., $8\frac{1}{2}$ l.; lat., $4\frac{1}{5}$ l.

The strong sinuation of the sides of the prothorax behind the middle readily distinguishes this species from *H. Gouldi*, Hope, and *H. nobilis*, Blackb. Its antennal club with only three lamellæ separates it from *H. bella*, Blackb., and the very much longer stipes of its antennæ from *H. pulchella*, Blackb. I have no doubt the female differs from the male by the much shorter lamellæ of its antennæ.

Victoria; given to me by Mr. French.

H. lucifera, sp. nov. Fem.(?) Breviter ovata; minus nitida; rufa, antennis palpis elytrisque testaceo-brunneis; iridescens: corpore subtus femoribusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} multo (quam 4^{us} sat) breviori; antennis 9-articulatis, articulo 3^o 2^o longitudine subæquali, clava 4-articulata quam articuli 2-5 conjuncti vix breviori, clavæ articulo basali quam 2^{us} circiter dimidio breviori; clypeo modice elongato, fortiter reflexo, nitido, cum frõnte sat crebre punctulato; prothorace quam longiori duplo latiori, antice fortiter angustato, supra sparsim subtilissime punctulato, lateribus sat arcuatis sat anguste marginatis, basi sat fortiter sinuata, angulis posticis rotundatis; elytris modice geminato-striatis, leviter dupliciter (subtiliter et minus subtiliter) sat crebre punctulatis; pygidio pernitido, puncturis subtilissimis sparsissimis setiferis impresso: tarsorum posticorum articulo basali quam 2^{us} multo breviori. Long., 11 l.; lat., $6\frac{2}{5}$ l.

A species of very widely ovate form, very close to the insect that I take to be *H. gigantea*, Burm., but differing from it strongly by the structure of its antennæ and the sculpture of its pygidium. I do not think I can be mistaken in my identification of *gigantea* with a species (of which there is a male in my collection and a female in Mr. Lea's), from Perth, W.A., agreeing well with the description except in respect of the antennæ. Burmeister says that the antennal flabellum of the female is 3-jointed, and that of the male 4-jointed, while I regard the flabellum as 4-jointed in both sexes. As a fact, I do not think that there is any *Haplonycha* in which it is correct to regard the number of joints in the flabellum as different in the sexes: and that, in

spite of my having myself attributed that difference to a species (*H. bella*), which I described in 1890, and before I had had the opportunity of observing any large proportion of the species now before me. It seems to be invariably the case that if there are 4 laminæ in the antennæ of the male the 6th joint of the antennæ of the female is produced into a lamella representing (not the last joint of the male stipes, but) the basal joint of the male flabellum. In most of these species the 6th joint is so lamelliform in the female that there is no doubt whatever of its being part of the flabellum, but in a few species it is only feebly produced. In the species that I take to be *gigantea* it is scarcely one-third of the 7th joint in length, and in *bella* it is still shorter (scarcely one-fifth); but the males of the species in which it is not produced at all in the female I invariably find to have only 3 laminæ. Under these circumstances I feel justified in thinking that Burmeister was not strictly correct in his statement that the flabellum has a different number of joints in the two sexes of *H. gigantea*. I am doubtful as to the sex of the unique type of *H. lucifera*. The laminæ of its flabellum are notably shorter than in the male, and slightly longer than in the female of the species I regard as *gigantea*, the basal lamella (the 6th joint of the antennæ) being a little more than half the next joint in length. The probability, however, is strongly in favour of its being a female.

Western Australia : Swan River : in the collection of Mr. Lea.

H. Mauricci, sp. nov. Mas. Subovata : minus lata : subnitida ; rufa, antennis dilutioribus : corpore subtus pedibusque dense longissime pilosis : palporum maxillarum articulo 3^o 2^o sat æquali, quam 4^{us} sat breviori : antennis 9-articulatis, articulis 2^o 3^o que sat brevibus inter se sat æqualibus, clava 5-articulata. hujus lamina basali perbrevis quam 2^a tribus partibus breviori (laminis 2-5 valde elongatis quam antennarum articuli 1-4 conjuncti multo longioribus, quam caput vix brevioribus) : oculis manifeste granulatis ; clypeo sat elongato, ad basin manifeste angustato, sat crebre punctulato, antice fortiter reflexo ; fronte confertim punctulata : prothorace quam longiori ut 13 ad 7 latiori, antice fortiter angustato, supra sparsius subfortiter punctulato, lateribus sat arcuatis sat anguste marginatis (his cum basi pilis elongatis fimbriatis), basi sat fortiter sinuata, angulis posticis rotundato-obtusis ; elytris ad basin longe pilosis, sat fortiter geminato-striatis, fortiter minus crebre punctulatis ; pygidio puncturis sparsis (his longe piliferis) im-

presso; tarsorum posticorum articulo basali quam 2^{us} sat breviori. Long., $6\frac{1}{2}$ l.; lat., $3\frac{2}{5}$ l.

A very remarkable species; the extremely long laminae of its antennae and the basal narrowing of its clypeus suggest a doubt whether it ought not to be treated as the type of a new genus. The antennal character, however, is reproduced in another species (*H. egregia*, Blackb.), which has a normal clypeus, and so connects it with *Haplonycha*. The long pilosity of the sides and base of its pronotum is suggestive of the species of my second group, but its pronotum has not the wide lateral gutter of those species. The granulation of the eyes is more distinct in this species than in most of its congeners. It may be noted that in this species and all the others of the Group V., in which I have indicated the antennal club as having more than three joints, the club might almost be called 5-jointed, as the 5th joint is slightly lamelliform on its inner side, but so slightly that it seems more convenient to regard it as appertaining to the stipes.

Ouldea; Central Australia; taken by Mr. Maurice.

H. egregia, sp. nov. Sat ovata; minus elongata; sat nitida; rufo-brunnea, antennis dilutioribus; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o 2^o sat æquali, quam 4^{us} sat breviori; antennis 9-articulatis, articulis 3^o 4^o que brevioribus inter se sat æquans, clava 5-articulata (maris fere ut præcedentis, *H. Mauricei*, sed articulo basali paullo longiori; feminae articulo basali vix laminato, 2^o quam 3^{us} paullo minus longe laminato, laminis 3-5 quam antennarum articuli 1-4 conjuncti vix brevioribus); clypeo sat elongato, cum fronte crebre subrugulose punctulato; prothorace quam longiori vix duplo latiori, antice minus angustato, supra sat crebre subleviter punctulato, lateribus modice rotundatis sat anguste marginatis pone medium manifeste sinuatis, basi manifeste sinuatis subtiliter æqualiter marginata, angulis posticis obtusis haud dilatatis; elytris perspicue geminato-striatis, crebre sat fortiter punctulatis; pygidio nitido, sparsius leviter punctulato; tarsorum posticorum articulo basali quam 2^{us} manifeste breviori. Long., $6\frac{1}{2}$ l.; lat., $3\frac{4}{5}$ l.

Agrees with *H. Mauricei*, Blackb., in the extremely long laminae of its antennal club, but otherwise more resembling *H. sinuaticollis*, Blackb., from which it differs by its much smaller size, prothorax less strongly sinuate at the base, etc.

South Australia; Troubridge, etc.

H. rustica, sp. nov. Fem. Elongato-ovata; sat nitida; rufo-brunnea, capite pronoto pygidioque nigris, antennis pal-

pisque dilutioribus; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3° quam 2^{us} vix (quam 4^{us} sat multo) breviori; antennis 9-articulatis, articulo 4° quam 3^{us} paullo longiori (ambobus brevibus), clava 4-articulata (hujus lamina basali quam 2^a fere dimidia parte breviori, ceteris quam antennarum articuli 2-5 conjuncti sat longioribus); clypeo sat elongato, modice reflexo, cum fronte crebre rugulose nec grosse punctulato; prothorace quam longiori fere duplo latiori, antice modice angustato supra crebre sat fortiter punctulato, lateribus modice rotundatis sat anguste marginatis pone medium subfortiter sinuatis, basi modice sinuata subtiliter æqualiter marginata, angulis posticis haud dilatatis fere rectis subprominulis (superne visis); elytris leviter geminato-striatis, crebre subfortiter punctulatis; pygidio sat nitido, leviter punctulato, brevissime setoso; tarsorum posticorum articulo basali quam 2^{us} sat breviori.

Maris antennarum laminis quam feminae longioribus; pygidio magis nitido, glabro, magis fortiter punctulato. Long., 8 l.; lat., $4\frac{1}{5}$ l.

Easily recognized among its immediate congeners by its black head, pronotum, and pygidium, also from *Mauricei* and *egregia* by the very much shorter laminae of its antennae, and from *sinuaticollis* by, *inter alia*, the much less strongly sinuate base of its prothorax, and the considerably closer puncturation of its elytra. I have founded the description on one of two female examples in the South Australian Museum rather than on the unique specimen (male), in my own collection, because the latter is a broken specimen, with only the basal lamella remaining of its antennal flabella, and therefore I cannot describe its antennae satisfactorily. There is a difference between the two females in the Museum in respect of the pygidium, the surface in one of them being somewhat dull and coriaceous, but I regard this as a mere accidental variation.

South Australia; Murray Bridge.

H. aricola, sp. nov. Fem. Elongato-ovata: sat nitida: rufo-brunnea, antennis dilutioribus, capite nonnihil obscuro; corpore subtus pedibusque longe pilosis; capite (antennis palpisque inclusis) fere ut præcedentis (*H. rusticae*) sed fronte minus crebre punctulato; prothorace fere ut præcedentis, sed supra multo magis subtiliter punctulato, ad basin parum sinuato; elytris quam præcedentis minus fortiter minus crebre punctulatis; pygidio sat nitido quam præcedentis minus leviter punctu-

lato; tarsorum posticorum articulo basali quam 2^{us} parum breviori. Long., $8\frac{1}{4}$ l. : lat., $4\frac{1}{5}$ l.

Somewhat close to *H. rustica*, but very differently coloured, with the pronotum very much more finely punctulate, etc. It is unlikely that the male differs much from the female except by the longer laminae of its antennae. As the unique type of this insect has already lost one of its maxillary palpi, I have not been able to risk a satisfactory examination of a palpus; but I can see (without unsafe manipulation) that, although the second joint is partially concealed, there is at least not *much* difference from the palpi of *H. rustica*.

South Australia; Gawler (taken by the late Mr. Rothe).

H. electa, sp. nov. Sat late ovata; sat nitida; rufo-brunnea, antennis palpisque dilutioribus; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} vix (quam 4^{us} multo) breviori; antennis 9-articulatis articulo 4^o quam 3^{us} longiori (ambobus sat brevibus), clava 4-articulata (hujus lamina basali quam 2^a maris quinta parte, femina septem partibus, breviori); clypeo sat elongato, sat fortiter reflexo, confertim rugulose punctulato; fronte magis subtiliter vix confertim punctulata; prothorace quam longiori fere duplo latiori, antice modice angustato, supra minus subtiliter punctulato, lateribus modice rotundatis sat anguste (parte postica minus anguste) marginatis pone medium subfortiter sinuatis, basi subfortiter sinuata, margine basali latera versus magis elevato, angulis posticis manifeste dilatatis fere rectis suoprominulis (superne visis); elytris sat foruter geminato-striatis, crebre sat fortiter punctulatis; pygidio nitido subtilius sparsissime punctulato; tarsorum posticorum articulo basali quam 2^{us} manifeste breviori. Long., $9\frac{1}{2}$ l.; lat., $4\frac{2}{5}$ l.

Very close to *H. fraterna*, Blackb., and differing chiefly by sexual characters. In the male the antennal laminae are scarcely shorter than the clypeus (in *fraterna* notably shorter). In the female the antennal laminae are very little shorter than in male *fraterna*, but the basal lamina (*i.e.*, that of the 6th antennal joint) equals only about one-seventh of the 2nd lamina in length (in *fraterna* the longer laminae are notably shorter than in *electa*, but the basal one equals in length nearly half the 2nd). In *electa* the male pronotum is less strongly punctured than the female, but in *fraterna* the pronotum of both sexes is punctured like that of male *electa*.

Western Australia.

H. sabulicola, sp. nov. Mas. Sat late ovata; sat nitida: rufo-brunnea, capite pronoto scutello pygidio et segmento ventrali apicali nigris; corpore subtus et pedibus longe pilosis; palporum maxillarium articulo 3° quam 2^{us} vix (quam 4^{us} multo) breviori; antennis 9-articulatis, articulis 3° 4° que sat æqualibus, clava 4-articulata (vel quasi 5-articulata, articulo antennarum 5° breviter sed manifeste lamelliformi); clypeo modice elongato, sat crebre punctulato: fronte crebre punctulata; prothorace quam longiori ut 7 ad 4 latiori, antice sat angustato, supra sparsius subtilius punctulato, lateribus modice arcuatis sat anguste (parte postica minus anguste) marginatis pone medium subfortiter sinuatis, basi sat fortiter sinuata (parte mediana subfortiter lobata), margine basali latera versus magis elevato, angulis posticis manifeste dilatatis fere rectis subprominulis (superne visis); elytris leviter geminato-striatis, crebrius sat fortiter punctulatis; pygidio nitido sparsim leviter punctulato; tarsorum posticorum articulo basali quam 2^{us} paullo breviori. Long., 8 l.: lat., 4 $\frac{1}{4}$ l.

Easily distinguishable, by its colouring, from its nearest allies, also by the finer and less close puncturation of its pronotum. The lamellæ of its antennæ are not much different from those of the male of *H. electa*, Blackb., but that of the 5th antennal joint is very evidently more developed. I have seen nine specimens of this insect, all from the sandy regions about Eucla, and other parts of south-west Australia (some of them taken by Mr. Graham), and find only very feebly indicated sexual character. The examples which I take to be females are a little smaller than the described type, with the antennal laminae a little shorter, the 5th antennal joint scarcely lamelliform, and the puncturation of the frons and the pronotum a little finer and less close. It is just possible that these specimens are feebly developed males, and that I have not seen the female.

South-west Australia (Eucla, etc.).

H. aqualiceps, sp. nov. Fem. Robusta: ovata: minus lata; sat nitida: obscure rufo-brunnea: corpore subtus pedibusque longe pilosis: palporum maxillarium articulis 2-4 inter se longitudine sat æqualibus: antennis 9-articulatis, articulo 4° quam 3° nonnihil longiori, clava 3-articulata (laminis quam antennarum articuli 2-6 conjuncti sat brevioribus); clypeo modice elongato, sat fortiter reflexo, cum fronte confertim sat rugulose punctulato: prothorace quam longiori fere duplo latiori, antice sat angustato, supra crebre subfortiter punctulato, lateri-

bus minus fortiter rotundatis sat anguste marginatis, sulco laterali æqualiter ut discus punctulato, basi sat fortiter sinuata, angulis posticis rotundatis; elytris sat fortiter geminato-striatis, crebrius sat fortiter punctulatis; pygidio sat nitido minus crebre subfortiter punctulato, parte mediana sublævi; tarsorum posticorum articulo basali quam 2^{us} multo breviori. Long., 12 l.; lat., 6½ l.

Its large size is sufficient to distinguish this species from all its immediate allies. It bears much general resemblance to the species which I take to be *H. badia*, Burm., but differs from it widely by the structure of its maxillary palpi, also by the very much closer puncturation of its pronotum, and by the hind angles of that segment being rounded off and not dilated.

Australia (exact *habitat* uncertain; probably Western Australia).

H. thoracica, sp. nov. Fem. Sat late ovata; sat nitida; rufo-brunnea, antennis palpisque dilutioribus; corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} vix (quam 4^{us} manifeste) breviori; antennis 9-articulatis, articulo 4^o quam 3^{us} sublongiori, clava 3-articulata (laminis quam articuli 3-6 conjuncti vix longioribus); clypeo minus elongato, fortiter reflexo, confertim rugulose punctulato; fronte crebre punctulata; prothorace quam longiori ut 17 ad 8 latiori, antice sat angustato, supra fortius minus crebre punctulato lateribus æqualiter sat fortiter arcuatis sat anguste marginatis, sulco laterali sat æqualiter ut discus punctulato, basi minus fortiter sinuata, angulis posticis (superne visis) obtusis sat bene determinatis; elytris sat fortiter geminato-striatis, sat crebre sat fortiter punctulatis; pygidio sub-nitido, leviter sat crebre punctulato; tarsorum posticorum articulo basali quam 2^{us} paullo breviori. Long., 8½ l.; lat., 4½ l.

Somewhat closely allied to the species that I take to be *H. pectoralis*, Blanch., but very distinct on account of its pronotum less closely punctulate and with its lateral outline forming an even curve, the greatest width being very little behind the middle.

New South Wales.

C. clara, sp. nov. Mas.(?) Ovata; modice elongata; sat nitida; rufo-brunnea, sternis infuscatis; corpore subtus pedibusque cinereo-pilosis, prothoracis marginibus pilis elongatis erectis fimbriatis; capite crebre rugulose, prothorace minus crebre minus fortiter, elytris (his

geminato - striatis) sat crebre minus subtiliter, pygidio sparsius subtilius sat æqualiter, punctulatis; antennis 9-articulatis, flabello 3-articulato (hujus articulis quam præcedentes 5-conjuncti vix brevioribus); palporum maxillarium articulo penultimo (hoc subcylindrico ad apicem setis brevibus minus perspicuis instructo) quam antepenultimus vix longiori; prothorace quam longiori duplo latiori, antice sat angustato, postice retrorsum sat late declivi, sat anguste marginato, angulis posticis rotundato-obtusis, basi modice sinuata; scutello acervatim punctulato: elytris ad apicem muticis; propygidio apicem versus crebre aspere minus subtiliter punctulato: tarsorum posticorum articulo basali quam 2^{us} vix breviori. Long., 9 l.; lat., 3 $\frac{1}{2}$ l.

From the comparatively long lamellæ of the antennal flabellum and the feebly and evenly convex pygidium I take my unique example of this insect to be a male. It is very distinct from most of the species that resemble it superficially, by the structure of its maxillary palpi.

South-west Australia.

H. faceta, sp. nov. Fem.(?) Ovata; minus brevis; nitida; rufo-brunnea, antennis palpis elytrisque dilutioribus (his exempli typici anguste fusco-marginatis); corpore subtus pedibusque longe pilosis; palporum maxillarium articulo 3^o quam 2^{us} parum (quam 4^{us} paullo) breviori; antennis 9-articulatis, articulo 3^o quam 4^{us} vix longiori, 6^o introrsum acuto; clava 3-articulata (laminis articulis 2-6 conjunctis longitudine vix æqualibus); clypeo brevi, sat fortiter reflexo, cum fronte sat grosse vix crebre punctulato, parte antica perpendiculari pernitida vix punctulata (serie puncturarum magnarum setiferarum excepta); prothorace quam longiori fere duplo latiori, antice sat angustato, supra inæqualiter sat fortiter punctulato, lateribus fortiter rotundatis sat anguste marginatis, basi sat fortiter sinuata, angulis posticis obtusis sat bene determinatis nonnihil dilatatis; elytris leviter geminato-striatis, minus fortiter sat crebre punctulatis; pygidio nitido, inæqualiter subgrosse punctulato, longitudinaliter obtuse carinato; tarsorum posticorum articulo basali quam 2^{us} paullo breviori. Long., 8 l.; lat., 4 l.

A nitid species, of clear bright colour, the fuscous edging of the elytra probably not constant, as it is more conspicuous in some parts than in others. I think the type a female, but probably there is very little external difference between the sexes, as in the allied *H. testaceipennis*, MacL. The antennal

laminæ, although rather elongate for a female, would be unusually short if the type were a male.

Western Australia (exact locality uncertain).

H. Jungi, sp. nov. Mas.(?) Ovata; sat elongata; nitida; rufo-brunnea, capite obscuriori, antennis palpisque testaceis: corpore subtus pedibusque sat longe pilosis: palporum maxillarium articulo 3^o quam 2^{us} vix (quam 4^{us} perspicue) breviori: antennis 9-articulatis, articulis 3^o 4^o que inter se longitudine sat æqualibus, 5^o 6^o que introrsum acutis: clava 3-articulata (laminis articulis 2-6 conjunctis longitudine æqualibus): clypeo sat brevi, fortiter reflexo, crebre minus fortiter punctulato, parte antica perpendiculari pernitida vix punctulata (serie puncturarum magnarum setiferarum excepta): fronte sparsius subtilius punctulata: prothorace quam longiori duplo latiori, antice minus fortiter angustato, supra sparsim subtilissime punctulato, lateribus minus fortiter arcuatis sat anguste marginatis, basi modice sinuata, angulis posticis fere rectis nonnihil dilatatis; elytris sat leviter geminato-striatis, fortius minus crebre punctulatis: pygidio sat nitido, sparsissime subtilissime punctulato; tarsorum posticorum articulo basali quam 2^{us} multo breviori. Long., 7 l.: lat, 3 $\frac{2}{3}$ l.

The sexual differences in the species of this group (the 7th) appear to be very slight: but from its antennal laminæ being slightly longer than in *H. faceta*, Blackb., and the 5th antennal joint, as well as the 6th, being angular on the inner side I judge the type of *H. Jungi* to be probably a male. It is specifically extremely distinct from *H. faceta* by the very different puncturation of all its dorsal segments and from both that species and *testaceipennis*, Macl., by the shape of its prothorax.

Western Australia: given to me by Mr. Jung.

CLERIDÆ.

NATALIS.

N. Leai, Blackb. This species has a somewhat involved history. I described it in Tr.R.S.S.A., 1899, and pointed out that it must be superficially extremely like *Opilo floccosus*, Schenk. (described in Deutsch. Ent. Zeit., of the preceding year). In 1903 Schenkling stated (*l.c.*) that he had found his species to be a *Natalis*, and that it was identical with *N. Leai*, Blackb. In the same year, Tr.R.S.S.A., p. 308, I reported Schenkling's announcement, and assented to it. Subsequently Herr Schenkling has been so good as to send me a specimen of his *floccosus*, with the result that on a re-

cent re-examination of the specimens of *Natalis* in my collection, I find that after all the two names appear to represent two distinct, though closely allied, species, which can be readily distinguished from each other by the puncturation of the sterna (especially the metasternum), which in *floccosus* is very close and asperate: while in *Leai* it is entirely different, the prosternum and mesosternum being almost punctureless, and the metasternum being along the median part strongly transversely rugate and elsewhere extremely sparsely punctulate. On the dorsal surface there are also evident differences, the pronotum of *floccosus* being notably more punctulate, and the white hairs on the elytra of *Leai* being disposed in perfectly well-defined fascicles. Of *floccosus* I have two examples (one of which is from Sydney, the exact locality of the other uncertain). Of *Leai* there are three examples in my collection, one of which is from Richmond River, and two from North Queensland (Mr. R. C. T. Perkins).

CURCULIONIDÆ.

TITINIA.

T. lata, Blackb. Mr. Lea (Tr.R.S.S.A., 1905, p. 219) makes this name synonymous with *T. ignaria*, Pasc. (*sic.*). He is, however, mistaken in this opinion. In the unique type (in my collection) of *lata*, *inter alia*, the rostrum is very much narrower between the insertions of the antennæ than in *T. ignaria*, Pasc.

LONGICORNES.

PAPHORA.

The following two species must be referred to this genus, though both very much larger than the type of this genus, very different in colouring, and of much more robust appearance. I cannot, however, find any structural character in them on which to found a new genus.

P. pulchra, sp. nov. Robusta; ferruginea, capite postice elytrorum basi et in his fascia postmediana lata chalybeo-nigris: breviter sparsius pubescens: antennis elytrorum apicem haud vel vix attingentibus, articulo 3^o quam basalis vix (4^o manifeste) brevioribus, articulis 5^o-9^o gradatim longioribus, 10^o 11^o que parum brevioribus: capite longitudinaliter leviter concavo, crebre rugulose punctulato: prothorace ut caput punctulato, linea brevi longitudinali postmediana nitida minus perspicue instructo, longitudine latitudini æquali, lateribus leviter rotundatis: elytris minus crebre (a basi retrorsum gradatim minus fortiter) vix rugulose punctulatis, ad apicem late rotundatis.

Probably the smaller of the two examples before me is a male. Apart from size, it differs little from the other specimen, but its antennæ are a trifle longer and less robust, with their apical two joints hardly perceptibly shorter than the 9th joint. Long., $6\frac{1}{2}$ -8 l.; lat, $2-2\frac{3}{5}$ l.

Western Australia (Murchison); sent by Mr. C. French.

P. miles, sp. nov. Robusta; piceo-nigra, palpis antennis pedibusque obscure ferrugineis; breviter sparsius pubescens; antennis elytrorum apicem vix attingentibus, articulo 3^o quam basalis sat longiori (quam 4^{us} sublongiori), articulis 5^o-11^o quam 4^{us} sat longioribus (inter se gradatim vix longioribus); capite longitudinaliter leviter concavo, crebre rugulose punctulato; prothorace supra crebre rugulose fere subgrosse punctulato, longitudine latitudini æquali, lateribus sat fortiter rotundatis; elytris ad apicem oblique truncatis, ad basin ut pronotum (hinc retrorsum gradatim minus fortiter, in parte apicali leviter sat sparsim) punctulatis. Long., $6\frac{1}{2}$ l.; lat., 2 l.

Of its previously described congeners, *P. robustior*, Blackb., is the nearest to the present species, but differs from it by its more parallel form, puncturation much less coarse and rugulose, basal joint of antennæ shorter in proportion to 3rd joint, elytra rounded at apex, prothorax much less rounded laterally, etc.

Central Australia (Oodnadatta).

The following table shows the distinctive characters of the four species that have now been attributed to this genus:—

A.	Elytra unicolorous.			
B.	Puncturation of elytra not (or scarcely) rugulose.			
C.	Apex of elytra narrowly rounded			modesta, <i>Pasc.</i>
CC.	Apex of elytra very widely rounded	robustior, <i>Blackb.</i>
BB.	Elytra very strongly rugulose in their front half	miles, <i>Blackb.</i>
AA.	Elytra bicolorous	pulchra, <i>Blackb.</i>